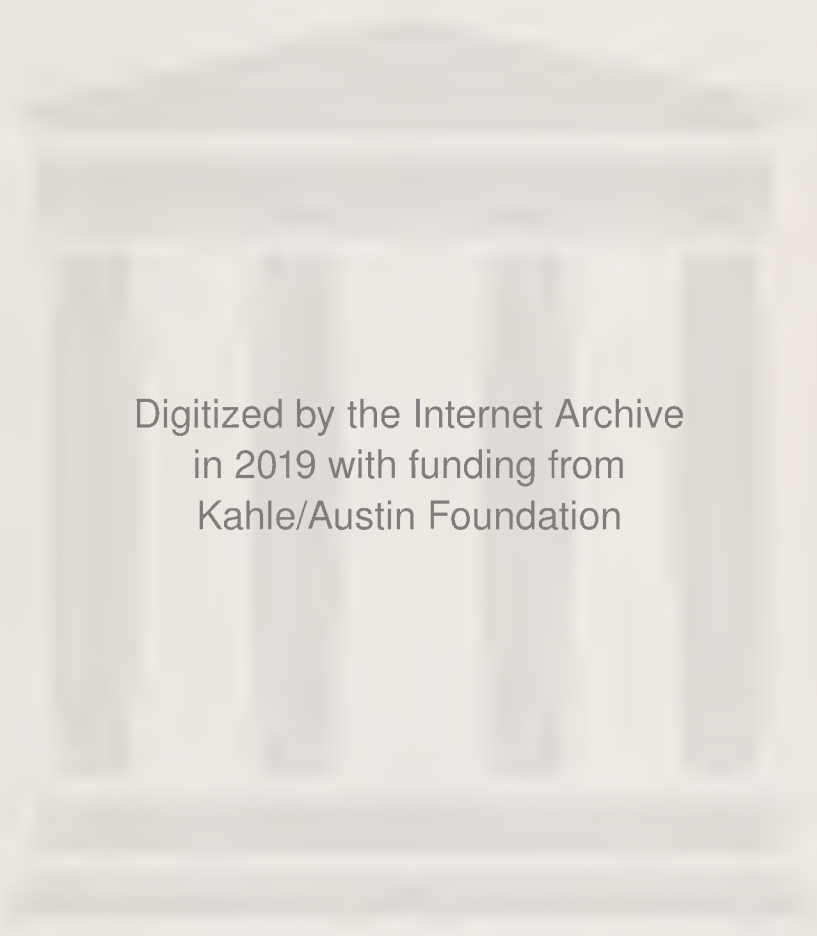


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Bulletin 747

GEOLOGIC LITERATURE ON NORTH AMERICA

1785-1918

BY

JOHN M. NICKLES

PART II. INDEX



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GEOLOGIC LITERATURE ON NORTH AMERICA, 1785-1918.

By JOHN M. NICKLES.

PART II. INDEX.

INTRODUCTION.

The publications here indexed are listed in Part I, Bibliography (Bulletin 746), where the names of the authors are arranged in alphabetic order and the titles of their books and papers are preceded by the numbers used in this index after the authors' names. This number consists of the last two figures of the year of publication, with an added letter (a, b, c, etc.) when there is more than one title in a year; the figures are printed in italics for books or papers published before the year 1819.

ABBREVIATIONS.

[The abbreviations for the names of States and for the provinces of Canada are given in Part I.]

Anon anonymous papers, placed at the end of Part I
Co. county
cos. counties

CORPORATE AUTHORS.

Am G American Geologist	Int G Cong International Geological Congress
Am Geog Soc American Geographical Society	Mass H R Massachusetts, House of Representatives
Boston Soc N H Boston Society of Natural History	Mass St Bd Educ Massachusetts State Board of Education
Cal Ac Sc California Academy of Sciences	Md C C Maryland Conservation Commission
Cal M As California Miners' Association	Md G S Maryland Geological Survey
Cal St M Bur California State Mining Bureau	Me St S Com Maine State Survey Commission
Can G S Canada, Geological Survey	Mex I G México, Instituto Geológico
Can M Br Canada, Mines Branch	Miss G S Mississippi State Geological Survey
Can Parl Canada, Parliament	Mo B G Missouri Bureau of Geology and Mines
Conn G S Connecticut Geological and Natural History Survey	N J G S New Jersey Geological Survey
Hawaiian Vol Obs Hawaiian Volcano Observatory	N Y G S New York Geological Survey
Ill G S Illinois State Geological Survey	N Y St Mus New York State Museum
	Nat Geog Soc National Geographic Society

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Ohio St Univ Ohio State University
Okla G S Oklahoma Geological Survey
Ont R Com Ontario, Royal Commission.
Oreg B M Oregon Bureau of Geology and Mines
Pa G S Pennsylvania Geological Survey
Pa Gen As Pennsylvania, General Assembly
Pa Top G S Com Pennsylvania Topographic and Geologic Survey Commission
R Ont Nickel Com Royal Ontario Nickel Commission
Smiths Inst Smithsonian Institution
Tenn Agr Exp Sta Tennessee Agricultural Experiment Station
U P R Co Union Pacific Railroad Company

U S Dp Int United States, Department of the Interior
U S G S United States Geological Survey
U S G S Terr United States Geological Survey of the Territories
Va G S Virginia Geological Survey
W Va G S West Virginia Geological Survey
Wash Ac Sc Washington Academy of Science
Wash G S Washington Geological Survey
Wis G S Wisconsin Geological and Natural History Survey
Wyo St G Wyoming, State Geologist

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 Controller Bay field: Evans (G W), 10; Martin (G C), 08
 Cook Inlet: Kirsopp, 03; Crane (W R), 14a, 15
 Fairhaven precinct: Henshaw, 09
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 Kachemak Bay field: Crane (W R), 14a, 15; Parks (G A), 15; Stone (R W), 06
 Kantishna region: Capps, 17
 Kayak field: Stoess, 03
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 Mount McKinley region: Brooks, 11
 Nabesna-White River district: Moffit, 10a
 Noatak-Kobuk region: Smith (P S), 13a
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 Seward Peninsula and Norton Bay-Nulato region: Smith (P S), 11c
 southeastern Alaska: Wright (C W), 06
 southwestern Alaska: Atwood, 09a; Spurr, 00; Stone (R W), 05c
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 Big Bonanza deposits: Thompson (A P), 13; Tolman, 16a
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 Clark lake region: Martin (G C), 10a
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 Ellamar district: Capps, 13a, 15a
 Hanagita-Bremner region: Moffit, 14
 Iliamna region: Martin (G C), 10a, 12a
 Kasaan Peninsula: Wright (C W), 08b, c, 15
 Kenai Peninsula: Grant (U S), 09b, 10a
 Kennicott Bonanza mine: Storm, 10
 Ketchikan and Wrangell districts: Wright (F E), 08
 Ketchikan region: Smith (P S), 14
 Kotsina-Chitina region: Moffit, 09, 09b
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 Matanuska and Talkeetna basins: Paige, 07a, b
 Matanuska Valley: Martin (G C), 14
 Mount Wrangell district: Mendenhall, 03, 03b
 Nabesna-White River district: Moffit, 09a, 10a
 Nizina district: Moffit, 11a
 Noatak-Kobuk region: Smith (P S), 13a
 Norton Bay-Nulato region: Smith (P S), 11c
 Port Valdez district: Johnson (B L), 15a
 Prince of Wales Island: Scott (W A), 09
 Prince William Sound: Grant (U S), 06c, 09a, 10, 10b, c; Johnson (B L), 15, 17; McCormick, 09; Moffit, 08; Stevens (B), 09a
 Russian Mountains: Maddren, 15
 Seward Peninsula: Smith (P S), 08, 11c
 Shungnak region: Smith (P S), 11
 southeastern Alaska: Chapin, 16; Knopf, 11a; Wright (C W), 07, 08, 09; Wright (F E), 06e
 Tanana-Nabesna region: Brooks, 00a
 Taral district: Moffit, 12a
 White River region: Brooks, 00a; Knopf, 10; Lewington, 09
 Wrangell Mountains: Abercrombie, 04
 Copper River district: Brewer (W M), 08, 08a; Keller, 08; Mendenhall, 05; Moffit, 08a, 17; Schrader, 00a, 01
 Douglas Island, Treadwell deposits: Kinzie, 04; Spencer (A C), 05b
 Eagle River region: Knopf, 11b, 12
 Ellamar district: Capps, 13a, 15a
 Fairbanks district: Eakin, 15b; Ellsworth, 12; Mertie, 17a; Prindle, 13
 Fairhaven precinct: Henshaw, 09
 Fort Hamliu to Kotzebue Sound: Mendenhall, 02
 Fortymile quadrangle: Prindle, 09
 General: Blake (T A), 69; Brooks, 05, 09b; Eldridge, 99; Emmons (S F), 98a
 Gold: Brooks, 03, 04, 05b, 06a, 11a, 15; Dunn, 97; Emmons (S F), 98a; Hutchins, 08; Kolderup, 01; Penrose, 03; Rickard (T A), 09; Wilson (E B), 06
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 Bonnifield region: Capps, 11, 12; Prindle, 07
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 Cape Yaktag: Martin (G C), 05b
 Chisana district: Brooks, 14; Cairnes, 13d, 14a
 Chisana-White River district: Capps, 15c, 16
 Chistochina field: Mendenhall, 03a
 Chitina district: Moffit, 10, 12b, 13a
 Circle district: Brooks, 07b; Ellsworth, 12; Prindle, 13b
 Clark Lake region: Martin (G C), 10a
 Copper River region: Mendenhall, 05; Moffit 08a; distribution of deposits: Becker, 95b
 Douglas Island: Spencer (A C), 05b
 Eagle River region: Knopf, 11b; 12
 Ellamar district: Capps, 13a
 Fairbanks district: Chapin, 14a; Eakin, 15b; Ellsworth, 12; Mertie, 17a; Prindle, 04, 05, 09a, 10a, 13; Smith (P S), 13b, f
 Fairhaven precinct: Henshaw, 09
 Fortymile region: Brooks, 00a; Prindle, 05, 08b, 09
 Glenn Creek district: Collier, 03
 Gold Hill district placers: Maddren, 09a, 10
 Haines district: Scott (W A), 09a
 Hanagita-Bremner region: Moffit, 14
 Hot Springs district: Eakin, 12, 15c
 Iditarod-Ruby region: Eakin, 14
 Iliamna region: Martin (G C), 10a, 12a
 Innoko, Ruby Creek, and Gold Hill districts: Maddren, 10
 Innoko district placers: Maddren, 09b, 10
 Innoko-Iditarod region; Eakin, 13b; Maddren, 11
 Iron Creek region: Smith (P S), 07a, 09a
 Juneau district: Eakin, 15a, 17; Hyder, 15; Spencer (A C), 04a, 03a
 Kautishna region: Prindle, 07
 Kenai Peninsula: Grant (U S), 09b, 10a; Seward-Sunrise region: Johnson (B L), 12
 Ketchikan and Wrangell districts: Wright (F E), 08
 Ketchikan region: Smith (P S), 14
 Klondike region: Everette, 07
 Kodiak and neighboring islands: Martin (G C), 13
 Kotsina-Chitina, Chistochina, and Valdez Creek regions: Moffit, 09
 Kotsina-Kuskulana district: Moffit, 15a
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 Kougarok region: Brooks, 07a
 Koyukuk-Chandalar region: Maddren, 10a, 13
 Kuskokwim region: Maddren, 15
 Lake Clark-Iditarod region: Smith (P S), 15a
 lode mining: Wright (C W), 07, 08; Wright (F E), 06e
 McKinley Lake district: Chapin, 13
 Matanuska and Nelchina valleys: Martin (G C), 14

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Gold: Matanuska and Talkeetna basins: Paige, 07a, b

Matanuska field: Martin (G C), 06b

Mount McKinley region: Brooks, 11

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Mulchatna placers: Katz, 10

Nabesna-White River district: Moffit, 09a, 10a

Nelchina-Susitna region: Chapin, 15, 18

Nenana region: Maddren, 17

Nizina placer district: Moffit 09b, 11a

Noatak-Kobuk region: Smith (P S), 13a

Nome and Fairbanks regions: Lincoln, 10

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Nome region: Bogdanovich 01: Brooks, 01, 01d; Halla, 07; Hutchins, 07c; Moffit, 07; Queneau, 02a; Rickard (F), 01; Schrader, 00, 01a; Weber, 00, Yale, 00

Norton Bay-Nulato region: Smith (P S), 11c

Nulato-Council region: Smith (P S), 10a

Porcupine district: Brooks, 00a; Eakin, 17a; Wright (C W), 04, 04a

Port Valley district: Johnson (B L), 15a

Port Wells district: Johnson (B L), 14

Prince William Sound: Grant (U S), 06d, 09, 10, 10b; Johnson (B L), 15, 17

Rampart region: Eakin, 12, 13; Hess, 08; Prindle, 05a, 06b

Ruby district: Eakin, 13a, 14a; Maddren, 09, 10, 12

Ruby-Kuskokwim region: Mertie, 16

Seward Peninsula: Chapin, 14c, d; Collier, 08a; Eakin, 15c; Henshaw, 10; Mertie, 17c; Moffit, 05, 06a; Smith (P S), 08, 09, 11c, 12b, 13c

Seward-Sunrise region: Johnson (B L), 12

Shumagin Islands: Martin (G C), 05c

Shungnak region: Smith (P S), 11

Shushana district: Ellis, 15

Sitka district: Knopf, 12a

Solomon and Casadepaga quadrangles: Smith (P S), 10

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Unalak Island: Collier, 05

Unga and Douglas islands: Lincoln, 10

Valdez district: Brooks, 12b; Moffit, 14b; Storm, 12

vein mining: Purington, 06

Willow Creek district: Capps, 14, 15b, 16b; Katz, 11; Smith (S S), 13

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Yentna district: Capps, 12a, 13

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Yukon-Koyukuk region: Eakin, 14b, 16

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Hanagita-Bremner region: Moffit, 14

Hot Springs district: Eakin, 15c

Iditarod-Ruby region: Eakin, 14

Iliamna and Clark lakes region: Martin (G C), 10a

Iliamna region: Martin (G C), 12a

Innoko-Iditarod region: Eakin, 13b

Iron: Whittier, 17

Haines: Knopf, 10c

Kenai Peninsula: Grant (U S), 10a

Matanuska field: Martin (G C), 06b

Nome district: Eakin, 15d

Iron Creek: Smith (P S), 06a, 09a

Juncau region: Eakin, 15a; Hyder, 15

Kantishna region: Capps, 17

Keaul Peninsula: Brewer (W M), 12; Grant (U S), 09b; Martin (G C), 15; southern part: Grant (U S), 10a

Ketchikan and Wrangell mining districts: Wright (F E), 08

Ketchikan district: Brooks, 02a; Chapin, 17; Courtis, 00; Smith (P S), 14

Klondike region: Everette, 07

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Kotsina-Chitina, Chistochina, and Valdez Creek regions: Moffit, 09

Kotsina-Kuskulana district: Mertie, 15; 15a

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Koyukuk-Chandalar region: Maddren, 13

Kuskokwim region: Maddren, 15

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- Mica, Seward Peninsula: Smith (P S), 08
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- Nabesna-White River district: Moffit, 09a, 10a
- Nelchina Valley: Martin (G C), 14
- Nelchina-Susitna region: Chapin, 18
- Nenana region: Overbeck, 17
- Nizina district: Moffit, 11a
- Noatak-Kobuk region: Smith (P S), 13a
- Nome quadrangle: Moffit, 13
- Nonmetallic products: Wright (C W), 06, 07a
- Northern Alaska: Schrader, 04
- Norton Bay-Nulato region: Smith (P S), 11c
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- Ore bodies in glaciated regions: Wright (C W), 11
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- Peat: Davis (C A), 09, 10b
- Petroleum: Brooks, 15a; Höfer, 10; Martin (G C), 04, 04a, 05d
Alaska Peninsula: Atwood, 11
Controller Bay: Martin (G C), 07a, 08
Iliamna region: Martin (G C), 12a
Katalla, field: Prosser (W T), 11; Thompson (A), 12
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Yakutat Bay: Tarr, 06
- Port Valdez district: Johnson (B L), 15a
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- Prince William Sound: Grant (U S), 06c, 10, 10b, 12; Johnson (B L), 14a, 15, 16a, 17; Schrader, 00a
- Quicksilver, Kuskokwim region: Smith (P S), 15b
- Rampart and Hot Springs regions: Eakin, 12
- Rampart quadrangle: Eakin, 13
- Resurrection Bay to Tanana River: Mendenhall, 00
- Ruby district: Eakin, 13a
- Ruby-Kuskokwim region: Mertie, 16
- Seward Peninsula: Henshaw, 10; Mertie, 17b; Smith (P S), 08, 09, 12b; northwestern part: Collier, 02; southeastern part: Smith (P S), 11c
- Shungnak region, Kobuk Valley: Smith (P S), 11
- Shushana district: Ellis, 15
- Silver: Brooks, 06a
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- Silver: Seward Peninsula and Norton Bay-Nulato region: Smith (P S), 11c
- Sitka district: Knopf, 12a
- Solomon and Casadepaga quadrangles, Seward Peninsula: Smith (P S), 10
- Solomon and Nuukluk River basins: Smith (P S), 07
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- Southeastern Alaska: Chapin, 16; Knopf, 10b, 11a; Spencer (A C), 05c; Wright (F E), 05b
- Southwestern Alaska: Atwood, 09a; Wright (C W), 09
- Sulphur, Makushin deposits, Unalaska: Lawton, 09
- Talkeetna basin: Paige, 07a, b
- Taral River district: Moffit, 12a
- Tin: Bell (R N), 03; Brooks, 03a; Collier, 05a; Eakin, 15
Birch Creek district: Johnson (B L), 10
Cape Prince of Wales: Fay, 07
Seward Peninsula: Chapin, 14d; Knopf, 08, 05b, 09; Smith (P S), 12b
York region: Brooks, 01a, c; Collier, 03c, 04, 04a; Hess, 06; Rickard (E), 03
- Tolovana district: Brooks, 16
- Treadwell deposits, Douglas Island: Dawson (G M), 89c; Hershey, 11; Palache, 04a; Spencer (A C), 05
- Tungsten near Fairbanks: Bateman, 18
- Turnagain-Knik region: Capps, 16a
- Valdez Creek: Moffit, 11b, 12, 14b; Storm, 12
- Vein mining: Purington, 06
- Vein-filled openings, southeastern Alaska: Spencer (A C), 05d
- Wolframite and cassiterite, Birch Creek district: Johnson (B L), 10
- Wolframite-topaz ore from Lost River: Knopf, 08c
- Wrangell district: Chapin, 17
- Yakataga district: Maddren, 14; Thompson (A G), 15
- Yakutat Bay region: Tarr, 06
- Yentna district: Capps, 13
- Yukon-Koyukuk region: Eakin, 14b, 16
- Historical geology.*
- Alaska Peninsula: Atwood, 11; Stanton, 05c
- Alatna-Noatak region: Smith (P S), 12a
- Alluvial deposits, Yukon River: Dall, 69b
- Anvik-Andreafski region: Harrington (G L), 17, 18
- Arctic slope: Leffingwell, 13
- Balboa-Herenden Bay district: Atwood, 09b
- Berners Bay region: Knopf, 11
- Bonnifield region: Capps, 12
- Broad Pass region: Moffit, 15
- Cantwell formation, Alaska Range: Pogue, 15a
- Cape Lisburne region: Collier, 06
- Cape Nome region: Brooks, 01; Halla, 07; Moffit, 07; Schrader, 00
- Cape Thompson section: Kindle, 09c
- Chandler and Koyukuk rivers: Schrader, 00b
- Chisana-White River district: Capps, 15c, 16
- Chitina River region: Rohn, 00
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 Cook Inlet region: Paige, 07; Stanton, 05c
 Copper Mountain: Wright (C W), 15
 Copper River region: Mendenhall, 05; Schrader
 00a, 01; Tarr, 13a; Carboniferous: Men-
 denhall, 03d
 Cosna-Nowitna region, Alaska: Eakin, 18
 Eagle River region: Knopf, 12
 Ellamar district: Capps, 15a
 Ellipsoidal lavas, Prince William Sound
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 Fairbanks district: Prindle, 10, 13
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 Fortymile quadrangle: Prindle, 09
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 son, 04; Emmons (S F), 98a, b; Fischer,
 72
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 Gulkana-Susitna region: Moffit, 12
 Hanagita-Bremner region: Moffit, 14
 Iditarod-Ruby region: Eakin, 14
 Iliamna region: Martin (G C), 12a
 Jurassic strata: Dacqué, 11
 Kachemak Bay: Parks (G A), 15
 Kasaan Peninsula: Wright (C W), 15
 Kenai Peninsula: Martin (G C), 15
 Ketchikan and Wrangell districts: Wright
 (F E), 08
 Ketchikan district: Brooks, 02a
 Kotsina-Chitina region: Moffit, 09b
 Kotsina-Kuskulana district: Mertie, 15; Moffit,
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 Koyukuk-Chandalar region: Maddren, 13
 Koyukuk-Kobuk region: Smith (P S), 11b
 Kuskokwim region: Smith (P S), 15b
 Lake Clark-central Kuskokwim region: Smith
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 Flathead area: Dowling, 14b; MacKenzie, 16a; Rose, 18
 Galiano, Mayne, and Saturna islands: Clapp (C H), 14f
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 Queen Charlotte Islands: Clapp (C H), 13d; Dawson (G M), 80; Richardson (J), 73
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 Coast region: Bancroft (J A), 13; Moncton, 98
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 Copper: Brewster, 05; Wilson (A W G), 12a
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 Atlin district: Cairnes, 13
 Boundary district: Brock, 02a, 03; Keffer, 07; 07a, b, 08; Ledoux, 02; LeRoy, 13a; Rickard (F), 07; Stokes (R), 07; Phoenix: LeRoy, 12
 coast region: Bancroft (J A), 13
 East Kootenay: Schofield, 10a
 Eschelon Mountain: Evans (H F), 06b
 Fraser River region: Malloch, 10
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 Highland Valley camp: Drysdale, 16
 Indian River, Vancouver division: Camsell, 18, 18a
 Kamloops: Wade, 98
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 Lardeau district: Brock, 08a; Emmens, 10
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 Mother Lode mine: Allen (R H), 09
 Nelson area: LeRoy, 12a
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 Osoyoos and Similkameen districts: Camsell, 09

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Copper: Phoenix district: Rickard, 17a; Granby Consolidated, copper: Allen (R H), 09a
 Queen Charlotte Islands: McLellan, 10
 Rossland district: Brock, 06; Stokes (R), 07e
 Rossland mines: Allen (R H), 10
 Saltspring and Vancouver islands: Allan, 10
 Similkameen district: Bailey (F), 05; Cam-sell, 06a, 07; Keffer, 15; Scott (O N), 02
 Slocan district: LeRoy, 09
 Telkwa district: Dolmage, 18; Leach, 06
 Texada and Moresby islands: McConnell, 10a
 Texada Island: McConnell, 09a, 14; Marble Bay: LeRoy, 06, 07
 Trout Lake district: Emmens, 10a
 Tulameen district: Camsell, 10, 13
 Vancouver Island: Brewer (W M), 00, 06; Clapp (C H), 09, 10, 12; Weed, 08; Mount Sicker: Musgrave, 04; southern Vancouver Island: Clapp (C H), 14b, d, 17; Tyee deposit: Dolmage, 16
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 Finlay and Omenica rivers: McConnell, 96
 Fire clay deposits, Clayburn: Camsell, 13a
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 Forty-ninth parallel: Bauerman, 85
 Franklin mining camp, West Kootenay: Brock, 07a; Drysdale, 15
 Fraser Canyon, Siwash Creek area: Bateman, 12
 General: Baker (J), 94; Bowman, 87a; Brewer (W M), 02e; Carlyle, 97a; Dawson (G M), 77, 78b, 89; Hardman, 97; Robertson, 99, 05; Vicaire, 04
 Gold: Bowman, 87b; Cairnes, 11b; Dawson (G M), 96a; Evans (H F), 07; Gwillim, 10; Hepburn, 15; Hobson, 95; Lincoln, 11a
 Atlin district: Atlin District Board of Trade, 13; Cairnes, 11, 13; Carmichael, 07; Gwillim, 00a, 01, 02; Stretch, 00a
 Barkerville: Atkin, 04, 06
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 Bridge River camp, Lillooet district: Cirkel, 00
 Cariboo district: Bowman, 88; Jacobs, 11
 Cayoosh Creek: Moncton, 97
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 East Kootenay: Schofield, 10a
 Fairview district: Merritt, 99
 Fraser Canyon, Siwash Creek area: Bateman, 12
 Fraser River: Evans (H F), 05a; Malloch, 10
 Hedley district: Camsell, 08, 10; Rickard, 17
 Kamloops area: Dawson (G M), 95
 Kettle River district: Reinecke, 10a
 Lardeau district: Emmens, 10, 10b

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Gold: Lightning Creek: Atkin, 05
 Lillooet division, Yale district: Camsell, 12a
 Nelson area: LeRoy, 12a
 New Westminster and Texada Island: LeRoy, 06
 northern B. C.: Merritt, 98
 Osoyoos and Similkameen districts: Camsell, 09
 Portland Canal district: Emmens, 10e; McConnell, 11; Robertson (W F), 10; Thomson, 10
 Prince Royal Island: McConnell, 14b
 Queen Charlotte Islands: McLellan, 10
 Rossland district: Allen (R H), 10; Brock, 06; Bruce, 17a; Stokes (R), 07e; Yuill, 08
 Sheep Creek district: Gracey, 10
 Similkameen district: Camsell, 06a, 07
 Siwash Creek: Emmens, 11
 Skagit Valley, Yale district: Camsell, 12b
 Skeena River district: Leach, 07a, 10, 10a
 Slocan district: Bancroft (M F), 18; Gwillim, 96; LeRoy, 09, 10
 Texada and Morseby islands: McConnell, 10a
 Texada Island: McConnell, 09a
 Trail Creek district: Sword, 96
 Trout Lake district: Emmens, 10a
 Tulameen district: Camsell, 10, 10c, 13
 Unuk River region: Wright (F E), 06
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 Hedley district: Camsell, 08, 08a, 10a; Nickel Plate mine: Rickard, 17
 Highland Valley copper camp: Drysdale, 16
 Howe Sound region: Brewer, 00b; Britannia ore deposit: McConnell, 14f
 Hydromagnesite, Atlin: Young (G A), 16
 Interior plateau: Robertson (W F), 06a
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 Granby Bay: McConnell, 13
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- Kamloops district, Similkameen: Brewer, 00, 00h; Dawson (G M), 95
 Kamloops Lake region: Monckton, 99
 Kettle River district: Reinecke, 10a; Larson, 15
 Klehini Valley: Bryant (J W), 12
 Kootenay district: Beadle, 96a; Ledoux, 91; zinc: Argall, 06
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 Lead, Bear River District: Rush, 09
 Beaverdell district: Reinecke, 10
 East Kootenay: Jacobs, 10; Schofield, 10a, 12, 12a
 Lardeau district: Emmens, 10
 Lynn Creek district: Emmens, 13.
 St. Eugene mine: Stokes, 07d
 Skeena River district: Leach, 10, 10a
 Slocan district: Kendall, 99; LeRoy, 10
 Trout Lake district: Emmens, 10a
 Yale district: Camsell, 10b
 Lardeau district: Emmens, 10
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 Magnetite deposits of Texada and Vancouver islands: Lindeman, 11
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 Molybdenite: Evans (H F), 05d; Walker (T L), 11, 11a
 Lilloet mining division: Drysdale, 17a
 Lost Creek: Drysdale, 15c
 Mother Lode mine: Allen (R H), 09
 Mount Sicker district: Brewer (W M), 03b
 Nanaimo area: Clapp (C H), 14
 Natural gas: Denis, 06
 Nelson district, west Kootenay: Emmens, 10c; LeRoy, 12a
 New Westminster and Nanaimo districts: Le-roy (O E), 08
 New Westminster district: Bowman (A), 89; Howe Sound: Brewer, 00g
 New Westminster Island and Texada Island: LeRoy, 06
 Nickeliferous sand, Frazer River: Blake (J), 73b
 Nicola coal basin: Ellis, 05
 Northern B. C.: Dawson (G M), 80a
 Northern interior: Camsell, 16a
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- Omineca mining division: Brewer (W M), 15a, b; Galloway, 15; Babine Lake area: Emmens, 14a
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 Peace River canyon, coal measures: Galloway, 13
 Peace River country: Dawson (G M), 80a
 Pemberton Meadows: Brewer, 98
 Petroleum: Denis, 06; southeastern B. C.: Wil-lis, 01a
 Phoenix, Boundary district: LeRoy, 12
 Phoenix camp and Slocan district: LeRoy, 09
 Platinum: Bailey (F), 13; Brock, 04a; Hoffman, 88; Tulameen district: Kemp, 02
 Portland Canal district: Emmens, 10e; McCon-nell, 11, 12b, 13a; Robertson (W F), 10; Rush, 10; Thomson, 10
 Princess Royal Island: McConnell, 14b
 Pyrophyllite, Vancouver Island: Clapp (C H), 14e
 Quadra Island: Cairnes, 14e
 Queen Charlotte Islands: McLellan, 10
 Quicksilver: Ingall, 97; Monckton, 04
 Kamloops district: Colquhoun, 99
 Yale district: Camsell, 10b
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 Rossland district: Brewer, 98d, Brock, 06; Bruce, 17a; Campbell (C M), 02; Drysdale, 14a, 15a; King (C), 00a; Kirby, 04; Mac-Donald (B), 03; Stokes (R), 07e; Center Star mines: Allen (R H), 10
 St. Eugene silver-lead mine: Stokes (R), 07d
 Sandon district: Brewer, 98b
 Scheelite, Barkerville: Atkin, 05a
 Shale: Ries, 11, 15
 Sheep Creek district: Gracey, 10
 Shuswap area: Dawson (G M), 99a
 Silver, Atlin district: Cairnes, 13
 Bear River district: Rush, 09
 Beaverdell district: Reinecke, 10
 East Kootenay: Jacobs, 10; Schofield, 10a, 12, 12a
 Kettle River district: Reinecke, 10a
 Lardeau district: Emmens, 10
 Lynn Creek district: Emmens, 13
 Nelson district, west Kootenay: Emmens, 10c; LeRoy, 12a
 New Westminster and Texada Islands: LeRoy, 06
 Portland Canal district: Emmens, 10e; Thomson, 10
 Rossland district: Brock, 06
 St. Eugene mine: Stokes (R), 07d
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 Skeena River district: Leach, 10, 10a
 Slocan district: Gwillim, 96; Kendall, 99; LeRoy, 09, 10
 Telkwa district: Dolmage, 18; Leach, 06
 Trout Lake district: Emmens, 10a
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 Slocan district: Uglov, 17
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 Copper Mountain: Keffler, 15
 Siwash Creek section: Emmens, 11
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 McConnell, 13a
 Skeena River district: Leach, 07a, 10, 10a
 Slocan district: Baneroff (M F), 18; Drysdale,
 17; Gwillim, 97; Kendall, 99; LeRoy, 10;
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 Striped Mountain, Nickel Plate mines: Evans
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 Telkwa district: Dolmage, 18; Leach, 06, 07
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 Texada Island: Brewer, 99b, 00a, e, 01b; LeRoy,
 06; McConnell, 09a, 14; Marble Bay,
 copper: LeRoy, 07
 Thompson River Valley: Drysdale, 14
 Trail Creek district: Austin, 98c; Carlyle, 96a
 Trout Lake mining district: Emmens, 10a, d, 14
 Tulameen district: Camsell, 10, 13; diamonds:
 Camsell, 11, 11a; platinum: Camsell, 10c
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 Vancouver Island: Brewer, 98f, 99b, c, 00e, 01e;
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 Elk Valley coal basin: Rose, 17
 Field area, Yoho Park: Allan, 12, 14
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 Flathead area: MacKenzie, 16a; Rose, 18
 Forty-ninth parallel: Bauerman, 85
 Franklin mining camp, West Kootenay: Dry-
 sdale, 15
 Fraser River region: Bowen (N L), 14; Dawson,
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 16b, c; Queen Charlotte group: Clapp
 (C H), 14a
 Granby Bay: McConnell, 13
 Groundhog coal field: Malloch, 14
 Hazelton district: O'Neill, 18
 Highland Valley copper camp: Drysdale, 16
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 Lambe, 06a
 Isee River district: Allan, 12a
 Interior plateaus, Savona to Lytton: Drysdale,
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 International boundary region: Daly, 02, 03b,
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 Kamloops area: Dawson (G M), 95
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 Nelson area: LeRoy, 12a
 New Westminster and Nanaimo districts:
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 New Westminster district: Bowman (A), 89
 Nicola coal basin: Ells, 05
 Northern B. C.: Dawson (G M), 81a, 88, 88b;
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 Northern interior: Camsell, 16a
 Peace River canyon, coal measures: Gallo-
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 Pre-Cambrian formations: Daly, 12a; south-
 eastern B. C.: Schofield, 14b
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 cock, 04
 Great Basin region: Engelmann, 76
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 Greenland: Böggild, 17; northeastern: Grön-
 wall, 17; Natborst, 11
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 70; Broadhead, 75; Cady, 15; Cox (E T),
 75a; DeWolf, 09; Engelmann, 68; Green,
 70; Hall, 43c; Kay (F H), 15; Norwood,
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 Salem limestone: Weller, 08a
 Saline and Williamson cos.: DeWolf, 08a
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 95a; St. Clair, 17; Mississippian: Engel-
 mann (H), 63a
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 Hall, 64c; Hopkins (T C), 04a
 Bartholomew Co.: Elrod, 82
 Bedford limestone: Hopkins (T C), 97a, c
 Benton Co.: Gorby, 86
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 Perry Co.: Cox (E T), 72; Lesley, 62
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 Posey Co.: Collett, 84a
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 Sullivan Co.: Collett, 71
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 Appanoose Co.: Bain, 96c
 Benton Co.: Savage, 05a
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 Hamilton and Wright cos.: Macbride, 10
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 Jackson Co.: Savage, 06a
 Jasper Co.: Williams (I A), 05
 Jefferson Co.: Udden, 02
 Jones Co.: Calvin, 96
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 Keokuk Co.: Bain, 95c
 Kinderhook: Calvin, 88d
 Lee Co.: Keyes, 95c
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 Madison Co.: Tilton, 97
 Mahaska Co.: Bain, 95d; St. Louis limestone: Bain, 93
 Marion Co.: Miller (B L), 01
 Marshall Co.: Beyer, 97a
 Middle River section: Tilton, 95
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 Mississippian series: Bain, 95g
 Monroe Co.: Beyer, 03
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 Muscatine Co.: Calvin, 88d; Udden, 99
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 Raccoon River regions: St. John, 68a
 Scott Co.: Norton, 99; Tiffany, 85
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 Story Co.: Beyer, 99b
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 Kanawha black flint: White (I C), 02a
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 Atchison-Barnes: Knerr, 96
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 Joplin district: Smith (W S T), 07a
 Kansas City-McFarland: Bennett (J), 93
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 Leavenworth quadrangle: Hinds, 17
 Lyon Co.: Smith (A J), 03
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 Miami Co.: Swallow, 65, 66
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 Neosho River section: Beede, 06h
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 Permian: Beede, 05, 09; Cragin, 96a; Meek, 58a, 64f; Prosser, 05b; Swallow, 58c; upper: Prosser, 97b
 Reading blue limestone: Smith (A J), 05
 red beds, age: Williston, 99f
 Shawnee Co.: Beede, 98
 Silver City area: Twenhofel, 17
 southeastern: Haworth, 82
 southern: Prosser, 97d
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 Kaskaskia group: Miller (S A), 79h
 Kentucky: Christy, 48; Lesley, 58a; Lesquereux, 61a; Lyon, 60b; Miller (A M), 09; Owen (D D), 56; Worthen, 71a
 Bath Co.: Linney, 86
 Bedford formation: Foerste, 09a
 Big Stone Gap coal field: Campbell (M R), 93
 Black Mountain district: Dilworth, 12
 Blue Grass region: Matson, 09
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 central: Kindle, 99; Owen (D D), 47a; connection of coal fields: Miller (A M), 09; Shaler, 87a
 Chattanooga shale: Kindle, 12a
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 Clay and Knox cos.: Hodge (J M), 14a
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 Cumberland Mountain region: Moore (P N), 78a

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 Elkhorn district: White (D), 08a
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 Estillville quadrangle: Campbell (M R), 94
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 Hartford quadrangle: Gardner (J H), 12
 Irvine field: Shaw (E W), 17
 Jefferson Co.: Butts, 15
 Kenova quadrangle: Phalen, 08a, 12
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 Louisville region: Yandell, 47
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 Tradewater River region: Glenn, 12
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 Waverly formation: Morse (W C), 09, 12
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 McAlester coal group, age: White (D), 98b
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 (G C), 05; Ries, 02a; White (D), 02a
 Accident and Grantsville quadrangles: Mar-
 tin (A H), 08
 Allegany Co.: O'Harra, 00; Prosser, 01b
 Coal Measures: Clark (W B), 02c, e, 05a
 Garrett Co.: Martin (G C), 02
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 17; Hitchcock (C H), 61c; Hitchcock (E),
 41; Loughlin, 14b; Packard (A S), 98a
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 cial origin: Sayles, 10
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 46; Prout, 48; upper: Owen (D D), 52
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 ley, 04; Gallaher, 00; Hall, 43c; Keyes, 02,
 13e; King (H), 51; Maughas, 53; Shepard,
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 Boone Co.: Broadhead, 98
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 Greene Co.: Shepard, 98, 15; Hannibal forma-
 tion: Park, 05a
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 Jackson Co.: Broadhead, 78b; McCourt, 17
 Jasper Co.: Broadhead, 74; Norwood (C J), 74
 Jefferson Co.: Shumard (B F), 73
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 Kinderhook, Glen Park: Weller, 06, 09
 Leavenworth quadrangle: Hinds, 17
 Lexington area: Marbut, 98
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 Ozark Mountains: Keyes, 95g
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 Saline Co.: Meek, 73c
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 southeastern: Shumard (B F), 55
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 Castle Mountain district: Weed, 96a
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 Dillon quadrangle: Winchell (A N), 14
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 Elkhorn district, Jefferson Co.: Weed, 01
 Elkhorn Mountains: Stone (R W), 11
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 Great Falls region: Fisher (C A), 09, 09a; Weed, 92
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 Livingston quadrangle: Iddings, 94
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 Moorefield shale of Arkansas: Girty, 11
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 Egan Canyon district: Emmons (S F), 70
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 Eureka district: Hague, 83, 92
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 Robinson district: Lawson, 06
 southwestern: Ball (S H), 07
 Toyabe Range: Emmons (S F), 70
 White Pine district: Hague (A), 70
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 New Brunswick: Ami, 00k; Bailey, 90a, 02; Credner, 65; Dawson (J W), 55, 66; Ells, 01c, 06c, 08a; Gesner, 43; Gilpin, 83; Hind, 65; Hitchcock (C H), 65; Keele, 14; Poole, 03; Rogers (W B), 59d; Stopes, 12; Wilson (W J), 09a
 Bathurst district: Young, 11a
 Burnthill Brook area: Young (G A), 18
 Chignecto Bay: Poole, 03b
 Curries Mountain: Bailey (L W), 10a
 Eastern: Ells, 83
 Moncton area: Young, 12
 northern: Bailey, 87; Ells, 81, 83
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 St. John Co.: Matthew (G F), 63
 St. John plant beds: Matthew (G F), 01b; Stopes, 14
 southeastern: Ells, 85a
 southern: Bailey, 65, 72, 73, 80; Matthew, (G F), 65c
 volcanic rocks: Bailey, 05a
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New Mexico: Carboniferous coal measures in the Sierra Ladrões: Keyes, 06f
 central: Lee (W T), 08b
 Coal Measures: Herrick, 00
 Deming quadrangle: Darton, 17
 Estancia Plains: Keyes, 08b
 Estancia Valley: Meinzer, 11
 Guadalupe Mountains, Permian: Shumard (B F), 58
 Hanover district: Paige, 09
 Jemez-Albuquerque region: Reagan, 03
 Jornada del Muerto: Keyes, 05; Shumard (G G), 59
 Lake Valley district: Keyes, 08
 red beds, age: Lee (W T), 08c
 Luna Co.: Darton, 16
 Manzano group: Lee (W T), 09b
 northeastern: St. John, 76
 northern: Stevenson, 79, 81; Williston, 12c
 northwestern: Darton 10a; Dutton, 85
 Permian: Herrick, 00c; Pecos Valley: Wra-ther, 17
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 Roswell area: Fisher (C A), 06b
 San Miguel Co.: Gardner (J H), 10d
 Santa Fe region: Blake (W P), 59b
 Sierra Blanca field: Wegemann, 14
 Silver City quadrangle: Paige, 16
 Socorro: Herrick, 04
 Socorro and Valencia cos.: Herrick, 00a
 southeastern: Richardson (G B), 10a
 southern: Darton, 17a
 Tijeras region: Herrick, 98c
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Chalcocite and fluorspar, Jefferson Co.: Patton, 15a

Clay: Bailar, 08; Ries, 98b

Durango-Gallup field: Shaler, 07a; eastern Colo.: Butler (G M), 15; El Paso Co., Calhan: Richardson (G B), 11

Coal: Headden, 07, 07a; Hills, 93; Lakes, 89, 91, 04a, 05g, 06, 08; Marvine, 74; Merriam (L B), 03; Newberry, 88d; Ritter, 06b

Anthracite-Crested Butte quadrangles: Eldridge, 94

associated with silver, Ouray Co.: Hallowell 82b; Koenig, 81a

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Economic geology—Continued.

- Coal: Barela Mesa field: McLaughlin, 03
 Book Cliffs field: Richardson (G B), 07a, 09b
 Canon City field: Clark (R N), 73; Stevenson, 82; Washburne, 10a
 Carboniferous, Aspen and Glenwood Springs: Hills, 86
 central Colo.: Whiteside, 12a
 Colorado Springs field: Goldman, 10
 Crested Butte, Gunnison Co.: Lakes, 86a
 Danforth Hills and Grand Hogback: Gale, 07a
 Denver Basin: Eldridge, 89; Emmons (S F), 96; Martin (G C), 10
 Durango district: Taff, 07
 Durango-Gallup field: Shaler (M K), 07b
 Durango-Monero field: Gardner, 09a
 Elmore quadrangle: Hills, 99
 Front Range: Whiteside, 12b
 Grand Mesa and West Elk Mountains: Lee (W T), 12a
 Grand Mesa field: Lee (W T), 09
 Grand River: Thiele, 82
 Gunnison Co.: Hallowell, 83a
 Gunnison Valley: Woodruff, 12b
 La Plata Co.: Clayton, 78
 lignite fields: Pierce, 12
 Middle Park: Mallett, 75
 Newcastle, Garfield Co.: Hosoa, 97
 North Park: Beekly, 15
 northwestern Colo.: Gale, 07a, 09, 10; Hewett, 89
 Ouray quadrangle: Cross, 07a
 Pictou: Meade (F), 00
 Routt Co.: Fenneman, 06b; Parsons (H F), 03; Headden, 07; Herrick (R L), 08a
 southeastern Colo.: Van Diest, 90a
 southern Colo.: Gardner, 75
 South Park field: Washburne, 10
 Spanish Peaks quadrangle: Hills, 01
 Tercio district: Plumb, 05
 Tertiary: Hodge (J T), 71
 Trinidad region: Endlich, 77; Goodnow, 83; Lakes, 86; Richardson (G B), 10; Whiteside, 12
 Walsenburg quadrangle: Hills, 00
 Yampa field, Routt Co.: Campbell (M R), 06e; Fenneman, 06b; Weston, 14; Whiteside, 17
 Colorado Springs quadrangle: Finlay (G I), 16
 Copper: Snedaker, 07; Weed, 06
 Carson camp, Hinsdale Co.: Larsen, 11
 Chaffee, Fremont, and Jefferson cos.: Lindgren, 08c
 Evergreen deposit, Gilpin Co.: Bastin, 11c; Ritter, 07a, 08
 Cripple Creek district: Liebenam, 04; Lindgren, 06, 06d
 Monarch and Tomichi districts: Crawford (R D), 13
 Montezuma district, Summit Co.: Patton, 09
 Montrose Co., Cashin mine: Emmons (W H), 06a
 Pearl district: Read, 04a; Spencer (A C), 03a
 Rico district: Ritter, 13
 Sangre de Christo Range: Bagg, 08a

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Economic geology—Continued.

- Copper: Unaweeep district: Butler (B S), 14b
 Creede district: Emmons (W H), 13d; Kirby, 92; MacMechen, 92
 Crested Butte, Gunnison Co.: Lakes, 86a
 Cripple Creek district: Colburn, 13a; Hazellhurst, 00; Lakes, 95a; Lindgren, 04d, 05d; Moore (C J), 01; Penrose, 95, 98; Rickard, 96, 00, 01, 03c; Ritter, 05; Skewes, 95, 95a, 97; Stevens (E A), 03
 Cresson bonanzas: Patton, 17
 Independence mine: Schwarz (T E), 95
 replacement deposits: Colburn, 13
 Custer Co.: Emmons (S F), 96a; cerusite deposit: Brinsmade, 07a
 De Beque, Mesa Co., petroleum field: De Beque, 14; Woodruff, 13a
 Denver Basin: Eldridge, 89; Emmons (S F), 96
 Durango quadrangle: Emmons (W H), 05
 Eagle Co.: Tilden, 87
 Eagle, Grand, and Gunnison valleys: Peale, 76
 Eastern Colo.: Elliott, 71
 Elk Mountains: Emmons (S F), 94
 Elmore quadrangle: Hills, 99
 Enrichment, Cripple Creek: Bancroft, 02; Weed, 03h
 Santa Rita district: Bagg, 04
 Fall River district, Alice mine: Herrick (R L), 09
 Fissures, Telluride district: Purington, 05b
 Fluorspar: Burchard, 00b; Mineral Co.: Lunt, 15
 Fourmile district: Snow, 95
 Garnetiferous bed, Golden Gate Canyon, Jefferson Co.: Bailey (E W), 05
 General: Bliss (E), 64; Carroll, 16; Dalzell, 09, 11; Emmons (S F), 85; Foster (E L), 85; Frazer, 69; Hague (J D), 70; Hayden, 69; Henahan, 13, 14; Lakes, 88, 93, 97a, 04e, 05; Lee (H A), 98, 03; Old, 69, 72; Rath, 85l; Smith (J A), 67, 81, 83; White (E L), 07; Whitney (J P), 67
 Geologic horizon of ores: Hayden, 76d
 Geological distribution of precious metals: Rickard, 10
 Georgetown district: Foster (E L), 02; Spurr, 05a, 08
 Georgetown quadrangle: Ball (S H), 06
 Gilpin Co.: Bastin, 15a, b, 16, 17; Rogers (A N), 83; Rickard (F), 99
 ore bodies, origin: Becker (C M), 14a
 pitchblende: Tovote, 06
 Gold: Bliss (E), 64; Hayden, 69; Lindgren, 06; Silliman (Jr), 74
 Alma district: Patton, 12
 Battle Mountain: Guiterman, 91
 Bear Creek sylvanite camp: Emmons (W H), 06; Prosser (W C), 11a
 Boulder Co.: Farish, 91; Lindgren, 07b; Roland, 78
 Breckenridge district: Bradford (A H), 09; Crow, 01; Ransome, 11
 Carson camp, Hinsdale Co.: Larsen, 11
 Costilla Co., Grayback district: Patton, 10a

Colorado—Continued.*Economic geology—Continued.*

Gold: Cripple Creek: Blake (W P), 94b; Lakes, 94, 95a; Liebenam, 04; Lindgren, 06d; McCarn, 94; Patton, 15, 15b, 17; Pearce, 98, 98a; Penrose, 95, 98; Rickard, 96, 99, 01a, 02; Ritter, 05; Skewes, 97

Custer Co.: Emmons (S F), 96a

Fall River district, Alice mine: Herrick (R L), 09

Geologic distribution: Hayden, 76d; Rickard, 10

Georgetown quadrangle: Spurr, 08

Gold Prince mine: Scholl, 07

Gunnison belt: Lakes, 97, 06b

Gunnison Co.: Hill (J M), 09

Hahns Peak field: Gale, 06; George (R D), 09c

Idaho Springs district: Spurr, 06c

Lake City district: Irving, 11a

Lake Fork district: Woolsey, 07

La Plata Mountains: Toll, 08

Lay, Routt Co.: Gale, 08

Leadville: Argall, 34; Blow, 95; Boehmer, 10; Butler (G M), 12b

Monarch and Tomichi districts: Crawford, 13

Montezuma district, Summit Co.: Patton, 09; Ritter, 08a

Mosquito district, Park Co.: Moore (C J), 13

Newcastle: Rickard (F), 09; Rickard (T A), 09

Newlin's Gulch: Butler (G M), 12a

Ouray quadrangle: Cross, 07a; Endlich, 89

Park Co.: Sadtler, 97; Fourmile district: Hoover, 97

Platoro-Summitville district: Patton, 18

Plomo, San Luis Park: Gunther, 05

primary, in granite: Hastings, 08

Rico Mountains: Ransome, 01

Routt Co.: Gale, 08; Hahns Peak region: George (R D), 09b

San Francisco district: Martin (A H), 09

San Juan: Prosser (W C), 11; Camp Bird mine: Titcomb, 02

Sierra Blanca, telluride ore: Pearce, 98f

Summit Co.: Brown (T A), 12; Hausmann, 91

Telluride quadrangle: Purington, 98; Winslow, 00

Tombstone: Shaw (S F), 09

Gold Brick district, Gunnison Co.: Crawford, 16

Golden region: Berthoud, 75

Gold Hill region: Marvine, 74a

Grahamite: Newberry, 87; Wurtz, 70b

Granite: Bailar, 08; Gunnison: Hunter, 14

Grayback mining district, Costilla Co.: Patton, 10a

Gunnison Co.: Hallowell, 83; Hill (J M), 09; Warren (E R), 97a

Gunnison district: F., 80

Gypsum: Lakes, 04

Eagle Co.: Burchard, 11

Larimer Co.: Lee (H A), 00

Perry Park: Kruger, 10

Uncompahgre region: Siebenthal, 06

Hahns Peak region: Routt Co.: Draper, 97; George (R D), 09c

Hot springs: Lakes, 05h

Idaho Springs mining district: Spurr, 06c

Colorado—Continued.*Economic geology—Continued.*

Iron: Chauvenet, 86, 90; Leith, 06; Rolker, 86a

Boulder Co.: Jennings, 12

Caribou: Bastin, 14b

Costilla Co., Grayback district: Patton 10a

Gunnison Co.: Chauvenet, 88; Cebolla district: Singewald, 12b, 13a

Lake City district: Irving, 11a

Lake Fork extension of Silverton mining area: Woolsey, 07

Leadville: Argall, 14a

northern Colo.: Chauvenet, 87

Pitkin Co.: Devereux, 84

southern Colo.: Gardner (J T), 75

Taylor Peak and Whitepine deposits: Harder, 09

Lake City: Irving, 05b

La Plata Mountains: Freeman (H C), 85; Petre, 98

La Plata quadrangle: Purington, 99a

Las Animas district: Hawn (F), 74

Lead, Aspen: Spurr, 09a

Creede district: Emmons (W H), 13d

Custer Co.: Brinsmade, 07a; Hunter, 14a

Lake City district: Irving, 11a

Leadville district: Butler (G M), 12b; Emmons (S F), 86

Monarch and Tomichi districts: Crawford (R D), 13

Montezuma district, Summit Co.: Patton, 09; Ritter, 08a

Mosquito district, London mine: Moore (C J), 13

Rico district: Ritter, 13

Leadville district: Amelung, 80; Argall, 10, 14a; Barker (F L), 07; Boehmer, 08, 10; Butler (G M), 12b; Carlyle, 93; Emmons (S F), 82, 86; Freeland, 86; Henrich, 79; Ihlseng, 88; Moore (C J), 01a; Ricketts, 83; Robbins, 03; Rolker, 86b; Rose, 13; Storms, 99b, d; Warwick, 05

Downtown district: Emmons (S F), 07a

Iron Hill: Argall, 10; Blow, 88, 90

origin of ores: Raymond (R W), 88; Webb, 11

tellurium and bismuth: Pearce, 91

Liberty Bell, Telluride: Anon, 09

Lignite fields: Lesquereux, 73; Pierce, 12; Potter, 77

Limestone: Martin (G C), 09

Lodes in Tertiary eruptives: Rickard (T A), 07c

Manganese: Harder, 10

Manganiferous iron ore, Red Cliff, Eagle Co.: Umpleby, 17b

Mica deposits, Mesa Co.: Sterrett, 13; Boulder Co.: Schwarz (T E), 03

Mineral wealth: Emmons (S F), 85a

Minerals, nonmetallic: Bailar, 08

Mining districts: Endlich, 74; Miller (G W), 08

Molybdenum: Fleck, 16; Climax, Summit Co.: Brown (H L), 18; Haley, 18; Holland (L F S), 18

Monarch district, Chaffee Co.: Crawford, 10

Monarch and Tomichi districts: Crawford, 13

Montezuma mining district, Summit Co.: Patton, 09; Ritter, 08a

Mosquito district, Park Co.: Moore (C J), 13

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Economic geology—Continued.

- Mount Wilson district, San Miguel Co.: Nason, 00; Spaulding, 98
 Natural gas: Lakes, 91
 Boulder Co.: Van Diest, 88
 Manitou : Strieby, 94
 Pitkin Co.: Hills, 87
 Needle Mountains quadrangle: Irving, 05
 Nepesta quadrangle: Fisher (C A), 06a
 Nitrate deposits: Gale, 12
 North Park: Beekly, 15
 Northwestern Colo.: White (C A), 78d
 Oil fields: Lakes, 01
 Oil possibilities: Ziegler, 18b
 Oilshades: Adkinson, 18; Alderson, 18; Ziegler 18c
 Grand River: Thiele, 82
 Green River formation: Winchester, 17
 northwestern Colo.: Chase, 18; De Beque, 16; Hoskin, 18; Winchester, 16a; Woodruff, 14b
 Ordovician rocks: Darton, 06b
 Ore deposition at Aspen: Loughlin, 09
 Ore deposits: Emmons (S F), 87b
 Ouray district: Downer, 01a; Irving, 05a; Ransome, 00a
 American-Nettle mine: Downer, 01
 Camp Bird mine: Purington, 03a
 Ouray quadrangle: Cross, 07a; Irving, 05d
 Pelican mine, Clear Creek Co.: Lawrence, 02
 Perry Park region: Kruger, 10
 Petroleum: Lakes, 91, 01, 01a, 02; Newberry, 89
 Boulder field: Fenneman, 03, 04; Washburne, 09a
 De Beque field: De Beque, 14; Woodruff, 13a
 Florence field: Eldridge, 92; Fenneman, 05; Foote (F W), 15; Newberry, 88f, 1, 89a; Washburne, 09b
 Fremont Co.: Ihlseng, 86; Williams (S G), 76
 Rangely district: Gale, 08b
 Yampa field: Fenneman, 06b
 Pine Creek district, Gilpin Co.: McCarn, 96
 Pitchblende ores, Gilpin Co.: Alsdorf, 16; Bastin, 14a, 16b; Fleck, 08; Hill (N P), 73; Rickard (F), 13
 Platoro-Summitville district: Patton, 18
 Pre-Cambrian, Georgetown quadrangle: Ball (S H), 06
 Providence district, Boulder Co.: Van Diest, 95a
 Pueblo quadrangle: Gilbert, 97
 Pyrite, Leadville: Lee (H S), 18
 Radium: Parsons (C L), 14
 Rangely oil district, Rio Blanco Co.: Gale, 08b
 Rare metals: Fleck, 08; Boulder Co.: Wood (J R), 10
 Red Cliff region, Colo.: Means, 15
 Red Mountain district, Ouray Co.: Comstock, 89; Kedzie, 88; Schwarz, 89, 90, 97, 05
 Rico district: Ritter, 13
 Enterprise mine: Rickard, 97, 98a
 Newman Hill: Farish, 92
 Rico Mountains: Ransome, 01
 Rico quadrangle: Cross, 05a
 Rosita district: Clark, 79; Emmons (S F), 97b
 Rosita Hills, Custer Co.: Cross, 91b

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Economic geology—Continued.

- Routt Co.: Fenneman, 06b; Parsons (H F), 03
 Sangre de Cristo Range, Costillo Co.: Van Diest, 98
 San Juan region: Comstock, 83, 84; Endlich, 75, 76; Howe, 06; Ihlseng, 86; Purington, 05a; Read, 08; Reed, 11; Rickard, 03a; Virginus mine: Emmons (S F), 04b; Purington, 03d
 Seaton mine: Underhill, 97a
 Silver: Hayden, 69; Matteson, 11; Rickard (T A), 07e
 Aspen district: Spurr, 98, 09a
 Bear Creek: Emmons (W H), 06
 Boulder Co.: Rolland, 78
 Breckenridge district: Ransome, 11
 Carson camp, Hinsdale Co.: Larsen, 11
 Creede district: Emmons (W H), 13d
 Custer Co.: Emmons (S F), 96a
 Fall River district, Alice mine: Herrick (R L), 09
 geologic distribution: Rickard, 10
 Georgetown quadrangle: Spurr, 08
 Gunnison Co.: Hill (J M), 09
 Idaho Springs district: Spurr, 06c
 Lake City district: Irving, 11a
 Lake Fork district: Woolsey, 07
 Leadville: Argall, 10; Bntler (G M), 12b; Carlyle, 93; Emmons (S F), 86; Yankee Hill: Shedd, 81
 McClellan Mountain: Berthoud, 76
 Monarch district: Crawford (R D), 10; and Tomichi district: Crawford (R D), 13
 Montezuma district, Summit Co.: Patton, 09; Ritter, 08a; Van Horn (F R), 08a
 Mosquito district, London mine: Moore (C J), 13
 Ouray district: Cross, 07a; Ransome, 01b
 Rico Mountains: Ransome, 01
 Rosita region: Wulsten, 76
 Silver Lake basin: Prosser (W C), 14
 Telluride quadrangle: Purington, 98
 Silver Cliff: Emmons (S F), 97b; Grabill, 82; Wallace (S J), 80
 Silver Lake basin: Prosser (W C), 14
 Silverton quadrangle: Ransome, 01a, 05; fissure systems: Ransome, 00b
 Slate: Bailar, 08
 Southern Colo.: Stevenson, 81
 South Park region: Peale, 74a
 Southwestern Colo.: Comstock, 86c, 87
 Spanish Peak quadrangle: Hills, 01
 Sulphur deposits, Mineral Co.: Larsen, 13b
 Summit district, Rio Grande Co.: Hills, 85
 Taylor Peak and Whitepine iron deposits: Harder, 09
 Telluride district, San Miguel Co.: Porter (J A), 97; Purington, 97; Van Diest, 86; Winslow, 00; Wolf, 18a
 Telluride quadrangle: Cross, 99; Lay, 02; Purington, 98, 99
 Telluride veins, Lake Plata Mountains: Austin, 98a, 02
 Tellurium ores: Hill (N P), 73; Silliman (jr), 74
 Tenmile quadrangle: Emmons (S F), 98

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Economic geology—Continued.

- Tomichi district, Gunnison Co.: Dick, 18
 Treasure Mountain: Purington, 08
 Trinidad district: Whiteside, 12
 Tungsten: Ekeley, 09; Fleck, 16; Hills (V G), 09; Van Wagenen, 06; Walker (T L), 09
 Boulder Co.: George (R D), 09, 09b; Greenawalt, 07, 12; Kirk, 16; Leslie, 16; Lindgren, 07b; Palmer (L A), 13; Wolf, 16; Wood (J R), 10
 San Juan Co.: Cooper (C A), 99; Prosser (W C), 10
 Turkey Creek district, El Paso Co.: Stone (G H), 93c
 Twin Lakes region: Guentherodt, 96
 Unawep copper district, Mesa Co.: Butler (B S), 14b
 Uraninite: Pearce, 16
 Uranium: Fleck, 07, 09a, 16; Hillebrand, 00c, 05
 Uranium-vanadium ores, origin: Notestein, 18
 Vanadium: Fleck, 07, 09a, 16; Hillebrand, 00c
 Placerville: Fleck, 08; Hess, 13b
 southwestern Colo.: Thomas (K), 12
 Telluride: Zalinski, 08
 Vein intersections, Clear Creek Co.: Underhill, 97
 Vein structure, Enterprise mine, Rico district: Rickard, 98a
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 Wagon Wheel Gap, mineral deposits: Emmons (W H), 13e
 Walsenburg quadrangle: Hills, 00
 Whale lode, Park Co.: Jernegan, 75
 White River district: Endlich, 78
 Whopper lode, Gunnison Co.: Frazier, 81a
 Wolframite and scheelite, Leadville: Fitch, 16
 Zinc, Aspen: Spurr, 09a
 Leadville: Argall, 10; Butler (G M), 12b, 13; Loughlin, 18
 Monarch and Tomichi districts: Crawford (R D), 13
 Montezuma district, Summit Co.: Patton, 09; Ritter, 08a
 Rico district: Ritter, 13
- Historical geology.*
 Alma district, Park Co.: Patton, 12
 Animas River: Hawn (L), 74
 Anthracite-Crested Butte quadrangles: Eldridge, 94; igneous formations: Cross, 94a
 Apishapa quadrangle: Stose, 12
 Arapahoe formation: Davis (W M), 00a
 Archean-Cambrian contact, Manitou: Crosby, 99b
 Arkansas Valley: Darton, 06f; Gilbert, 96a
 Aspen district: Emmons, 88c; Newberry, 90; Sivyver, 88; Spurr, 93
 Aspen Mountain, Pitkin Co.: Brunton, 88; Henrich, 89
 Atlantosaurus beds: Hatcher, 03
 Atlas: Hayden, 77c
 Barcla Mesa coal field: McLaughlin, 03
 Bonanza district, Saguache Co.: Patton, 16
 Book Cliffs coal fields: Forrester, 18; Richardson (G B), 09b
 Boulder Co.: Farish, 91; Van Diest, 87; Sugarloaf district: Crawford (R D), 09

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Historical geology—Continued.

- Boulder district: Fenneman, 05b; Henderson (J), 04
 Breckenridge district: Ransome, 11
 Brush Creek region: George, 13a
 Buffalo Peaks, Mosquito Range: Emmons (S F), 83
 Canon City: Clark (R N), 73; Hatcher, 01d; coal field: Stevenson, 82; Washburne, 10a
 Carboniferous: Girty, 03; Sangre de Cristo Range: Lee (W T), 02a
 Castle Rock quadrangle: Richardson (G B), 15
 Castle Rock region: Lee (W T), 02b
 Central City quadrangle: Bastin, 17
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 Clear Creek, lower: Underhill (J), 06
 Coal Creek batholith, age: Schneider, 15
 Colorado formation: Stanton, 93
 Colorado Springs quadrangle: Finlay (G I), 16
 Comanche formation, southeastern Colo.: Darton, 05j
 Creede district: Emmons (W H) 13d
 Cretaceous, eastern Colo.: Collier, 66
 northeastern Colo.: Heroy, 15
 Rocky Mountain region: Lee (W T), 15a
 southwestern Colo.: Spencer (A C), 98
 Cretaceous classifications: Carstarphen, 11
 Cripple Creek district: Argall, 08; Cross, 95, 95c, 98a; Hazellhurst, 00; Lakes, 95a; Lindgren, 06d; McCarn, 94; Ritter, 05; Stevens (E A), 01; Stone (G H), 97
 Denver Basin: Cross, 84, 85b; Cannon, 95b; Eldridge, 89, 90; Emmons (S F), 96; Lakes, 05c
 Quaternary: Cannon, 89
 Tertiary formation: Cross, 89
 Denver formation: Cross, 89, 89a; Davis (W M), 00a; age: Cope, 89n; origin: Davis (W M), 97a
 Devonian, southwestern Colo.: Spencer (A C), 98a, 00
 Dinosaur beds: Williston, 78; Grand River valley: Riggs, 01, 02
 Eagle, Grand, and Gunnison valleys: Peale 76
 Eastern Colo.: Butler (G M), 15; Cannon, 90a; Van Diest, 90
 Elbert formation, Devonian: Cross, 04a
 Elk Mountains: Emmons (S F), 94; Holmes (W H), 76
 Elmore quadrangle: Hills, 99
 Engineer Mountain quadrangle: Cross, 10
 Erupted rocks: Endlich, 78b
 Eruptive mountains: Peale, 77a
 Florence oil field: Eldridge, 92
 Florissant lake beds: Cockerell, 16c; Henderson (J), 06; Knowlton, 16b; Scudder, 81; Wheeler (W M), 08
 Flow breccias: Patton, 15c
 Fluidal gneiss and contemporary pegmatites: Cross, 09a
 Foothills formations of north central Colorado: Henderson (J), 09
 Foothills structure, northern Colo.: Ziegler, 17c
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Historical geology—Continued.

Fox Hills formation: Stanton, 15b
 Fox Hills group: Stevenson, 79a
 Fox Hills sandstone: Knowlton, 16
 Fremont Co.: Williams (S G), 76
 Front Range: Hallowell, 82a; Hayden, 76; foothills, structure: Richardson (G B), 12a
 Garnetiferous bed, Golden Gate Canyon, Jefferson Co.: Bailey (E W), 05
 General: Berthoud, 81; Darton, 18a; Denton 66, 67; Girty, 03; Hague, 77; Hayden, 69, 71, 74, 76; Henderson (J), 14; Hills, 89b; King (C), 78a; Lakes, 88, 89; Loew, 75; Ziegler, 18b
 Geologic map: George (R D), 13b; U S G S Terr, 78
 Georgetown quadrangle: Ball (S H), 08; pre-Cambrian rocks: Ball (S H), 06
 Gilpin Co.: Bastin, 17
 Gleneyrie formation: Finlay, 07a
 Gold Brick district, Gunnison Co.: Crawford, 16
 Golden region: Berthoud, 75; sections: Ehnbohm, 16
 Gold Hill mining region: Marvine, 74a
 Grand Mesa and West Elk Mountains: Lee (W T), 12a
 Grand Mesa coal field: Lee (W T), 09d
 Grand River district: Peale, 77, 78
 Grayback district, Costilla Co.: Patton, 10a
 Greenhorn Mountain: Van Diest, 02
 Green River formation: Winchester, 18b
 Grizzly Peak breccias: Stone (G H), 99a
 Gunnison City: Lakes, 97
 Gunnison Co.: Hill (J M), 09; Tertiary coal measures: Hallowell, 83a
 Gunnison district: F., 80
 Gunnison Valley, coal resources: Woodruff, 12b
 Hahns Peak region, Routt Co.: Gale, 06; George (R D), 09c
 Huerfano Basin: Hills, 02a; Osborn, 97, 97b, i
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 Jura-Trias, southwestern Colo.: Hills, 82
 Laccolites, southeastern Colo.: Gilbert, 96b, d
 Lake City district: Cross, 11; Irving, 11a
 La Plata Co. coal field: Clayton, 78
 La Plata quadrangle: Cross, 99a
 Laramie group: Stevenson, 79b
 Las Animas district: Hawn (F), 74
 Leadville, Lake Co.: Carlyle, 93; Emmons (S F), 82; Ricketts, 83; Storms, 99d; Van Wagenen, 82
 Lignites, age: Stevenson, 74
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 Middle Park region: Marvine, 74; post-Laramie beds: Cross, 95a
 Monarch and Tomichi districts: Crawford (R D), 13
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 Monument Creek formation, age: Darton, 05i
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 Morrison and Sundance formations, relation: Lee (W T), 17d
 Morrison beds: Stanton, 05b

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Historical geology—Continued.

Morrison formation: Henning, 09; Lee (W T), 01, 02; Mook, 16; age: Schuchert, 18a
 Mosquito Range: Emmons (S F), 86
 Mount Wilson district: Nason, 00
 Needle Mountains quadrangle: Cross, 06b
 Nepesta quadrangle: Fisher (C A), 06a
 Northern Colo.: Cope, 74a; Ziegler, 17b
 North Park: Beekly, 15; Broadhead, 82d; Finlay (G I), 17
 Northwestern Colo.: White (C A), 78d, 89
 Oil fields: Lakes, 01
 Ordovician rocks: Darton, 06b
 Ouray district: Howe, 05; Purington, 03a
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 Palmer Lake: Cannon, 95a
 Perry Park: Cannon, 91a; syncline: Kruger, 10
 Permian, foothills: Butters, 13
 Pikes Peak sheet: Cross, 94
 Platoro-Summitville district: Patton, 18
 Post-Laramie deposits: Cross, 92
 Pre-Cambrian, Georgetown quadrangle: Ball (S H), 06
 Providence district, Boulder Co.: Van Diest, 95a
 Pueblo quadrangle: Gilbert, 97
 Rabbit Ears region: Grout, 13a
 Rangely oil district, Rio Blanco Co.: Gale, 08b
 Raton Mesa region: Knowlton, 13; Lee (W T), 11, 13b, 17
 Red beds: Henderson, 08; Henning, 13; southwestern Colo.: Cross, 05c
 Red Cliff region, Colo.: Means, 15
 Red Mountain district, Ouray Co.: Kedzie, 88
 Rico district: Rickard, 97, 98a; Newman Hill: Farish, 92
 Rico Mountains: Cross, 00; Ransome, 01
 Rico quadrangle: Cross, 05a
 Rocky Mountain front range: Darton, 04c
 Rocky Mountain National Park: Lee (W T), 17a
 Rocky Mountain region, Paleozoic: Tomlinson, 17
 Rocky Mountains: Hills, 91c; age: Peale, 77b
 Rosita Hills, Custer Co.: Cross, 91, 91b, 96
 Routt Co.: Fenneman, 06b
 Salida region: Cross, 95b
 Sangre de Cristo Range, Costilla Co.: Van Diest, 98
 San Juan Co.: Comstock, 83
 San Juan region: Comstock, 86b; Endlich, 75, 76
 San Luis district: Endlich, 74
 San Luis Valley: Siebenthal, 10
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 San Miguel formation: Cross, 98b
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 Seranton coal, Denver Basin: Richardson (G B), 17
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Arizona: Lee (W T), 08a

Bisbee quadrangle: Ransome, 04b

Bradshaw Mountains quadrangle: Jaggar, 05

Bright Angel quadrangle: Noble, 18

Buckskin Mountains: Blanchard, 13

Clifton-Morenci district: Lindgren, 05a

Colorado River region: Lee (W T), 06a, 07e

Globe quadrangle: Ransome, 02a, 04a

Grand Canyon district: Cadell, 87; Darton, 17b; Dutton, 82a; Noble, 14; Robinson (H H), 10

Jerome district: Provot, 16

San Franciscan field: Robinson (H H), 13

Santa Rita and Patagonia Mountains:
Schrader, 15

Shinumo area: Noble, 10

Sulphur Spring Valley: Meinzer, 13

Tertiary peneplain: Robinson (H H), 07

Warren district: Bonillas, 16

Yuma Co.: Bancroft (H), 11

Arkansas: Ashley, 97; Purdue, 07b; Veatch (A C), 06e

chalk region: Taff, 02b

Crowley's Ridge: Call, 91

Eureka Springs-Harrison quadrangles: Purdue, 16

northeastern: Stephenson, 16a

Ouachita Mountains: Purdue, 03

southwestern: Hill (R T), 88

Atlantic Coastal Plain: Shaler, 71

Atlantic shore line: Harris (H L), 94

Atlantic slope: McGee, 88a; Cenozoic: Darton, 94g

Barbados: Harrison (J B), 90

Bay of Fundy trough: Bailey, 97; Powers, 15e

Bermudas: Stevenson, 97

Black Hills: Jenney, 99

Blue Ridge: Keith, 92a

British Columbia: Dawson (G M), 81b

Beaverdell area: Reinecke, 15

Cascade Mountains: Daly, 06a

coast region: Clapp (C H), 15a

Cranbrook area: Schofield, 15

Field area: Allan, 14

Franklin mining camp, West Kootenay:
Drysdale, 15

Fraser delta: Camsell, 13a

Golden-Kamloops: Daly (R A), 15

Groundhog coal field: Malloch, 14

Hedloy district: Camsell, 10a

interior plateau region: Drysdale, 13

Nanaimo area: Clapp (C H), 14

Rossland: Bruco, 17a; Drysdale, 15a

Saskatchewan Mountains: Burwash, 11

southwestern: Tyrrell, 15a

Texada Island: McConnell, 14

Thompson River valley: Drysdale, 14

Tulameen district: Camsell, 13

Vancouver Island: Clapp (C H), 13e

Ymir area, West Kootenay district: Drysdale, 17

California: Comstock, 02a; Diller, 06; Forstner, 09a; Lawson, 08; Smith (J P), 09, 10, 16

ancient river channels: Kimble, 07a

Berkeley Hills: Lawson, 02

Berkeley region: Clark (C W), 17

Cahuilla Basin: Free, 14a

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California: Carmelo Bay: Lawson, 93d
 Coalinga district: Arnold, 10
 coast islands: Le Conte, 87
 Coast Ranges: Osmon, 05; Willis, 00a; southern: Fairbanks, 98
 Cuyama Valley: English, 16
 Eagle Mountains: Harder, 12
 gold belt: Turner, 94
 Grass Valley district: Lindgren, 96b
 Great Basin: Ball (S H), 06
 Great Valley: Ransome, 96a
 Klamath Mountains: Hershey, 03a
 Lake Mono region: Le Conte, 79
 Lassen Peak area: Diller, 95, 16b
 Marysville Buttes: Dickerson, 17e
 Miocene: Cooper (J G), 74b
 Mohave desert region: Baker (C L), 11
 Mother Lode district: Ransome, 00
 Nevada City district: Lindgren, 96, 96b
 northern coast: Lawson, 94
 Owens Valley: Lee (W T), 06
 Pliocene history: Cooper (J G), 74a
 Point Reyes Peninsula: Anderson (F M), 99
 Pyramid Peak quadrangle: Lindgren, 96a
 San Clemente Island: Smith (W S T), 98
 San Diego Co.: Mendenhall, 10
 San Francisco district: Lawson, 14
 San Francisco Peninsula: Ashley, 95
 San Luis quadrangle: Fairbanks, 04
 Santa Ana Mountains: Dickerson, 14b
 Santa Catalina Island: Smith (W S T), 97
 Santa Clara Valley: Crandall (R), 07
 Santa Cruz quadrangle: Branner, 09b
 Santa Maria district: Arnold, 07q
 Sierra Nevada: Le Conte, 80; Lindgren, 93, 96e, 11; Turner, 94c
 southern: Baker (C L), 12; Le Conte, 99; Loew, 76; Tertiary: Louderback, 13
 southern coast: Lawson, 93e
 southern islands: Smith (W S T), 00
 Taylorsville region: Diller, 08b
 Tejon group: Dickerson, 16
 Temblor Basin: Anderson (F M), 14
 Tertiary: Anderson (F M), 08
 Weaverville quadrangle: Diller, 14
 Yolo Co., Cache Creek area: Durst, 16
 Cambrian: Walcott, 15
 Canada: Coleman, 10b; Parks (W A), 12a; Young (G A), 09
 eastern: Bailey, 89a; Poole, 05
 Gulf of St. Lawrence: Clarke (J M), 13a
 northeastern: Low, 06
 Canadian shield: Coleman, 10b
 Cape Breton Island: Matthew (G F), 14
 Carboniferous: Winchell (A), 59; Appalachian basin: Stevenson, 06; Coal Measures: Stevenson, 73
 Caribbean area: Gregory (J W), 95
 Cascade Mountains: Lang, 88; Smith (G O), 03; Symons, 82; Willis, 88a, 96
 Central America: Vaughan, 18c
 Chazy time: Raymond (P E), 06
 Circles of deposition: Newberry, 74c
 Classification: Chamberlin (T C), 93
 Colorado: Darton, 06f; Denton, 67; Fisher (C A), 06a

Geologic history—Continued.

Colorado: Apishapa quadrangle: Stose, 12
 Boulder district: Fenneman, 05b
 Breckenridge district: Ransome, 11
 Castle Rock quadrangle: Richardson (G B), 15
 Central City quadrangle: Bastin, 17
 Colorado Springs quadrangle: Finlay (G I), 16
 Costilla Co., Grayback district: Patton, 10a
 Cripple Creek region: Lakes, 95a
 Denver region: Cannon, 95b; Eldridge, 89, 90; Emmons (S F), 96
 Elk Mountains: Emmons (S F), 94
 Elmore quadrangle: Hills, 99
 Engineer Mountain quadrangle: Cross, 10
 Florissant basin: Henderson (J), 06
 Georgetown quadrangle: Ball (S H), 08
 Gilpin Co.: Alsdorf, 16
 Gold Brick district: Crawford (R D), 16
 La Plata quadrangle: Cross, 99a
 Monarch district: Crawford (R D), 10, 13
 Needle Mountains quadrangle: Cross, 05b
 north central: Henderson (J) 09
 northwestern: Henderson (J), 10
 Ouray quadrangle: Cross, 07a
 Palmer Lake: Cannon, 95a
 Perry Park: Kruger, 10
 Pueblo quadrangle: Gilbert, 97
 Raton Mesa region: Lee (W T), 17
 Rico Mountains: Cross, 00
 Rico quadrangle: Cross, 05a
 Rocky Mountain National Park: Lee (W T), 17a
 Rocky Mountains: Hills, 91c
 Silverton quadrangle: Cross, 05
 southwestern: Atwood, 15
 Telluride quadrangle: Cross, 99
 Tomichi district: Crawford (R D), 13
 volcanic eruptions: Hills, 95a
 Colorado Canyon: Davis (W M), 06c
 Columbia River: Symons, 82
 Connecticut: Dale, 11a; Kimmel, 93; Lull, 12b; Rice (W N), 06
 central: Barrell, 12
 Housatonic region: Crosby, 00b
 New Haven region: Dana (J D), 71
 Triassic area: Davis (W M), 94
 Continental history: Willis, 06
 Coral reefs: Vaughan, 15b
 Cordilleran Mesozoic revolution: Lawson, 93c
 Cordilleras: Lindgren, 15a; Ransome, 15; Canada: Schofield, 13; forty-ninth parallel: Daly (R A), 13
 Costa Rica: Romanes, 12; Talamanca region: MacDonald (D F), 14; Miller (B L), 14
 Cretaceous, Arkansas-Texas: Hill (R T), 89d; South Carolina: Berry, 14
 Critical periods: Le Conte, 77
 Cuba: Hill (R T), 94a, 95b; Spencer (J W), 95a; Valdés Ragués, 97; Oriente Province, Firmeza district: Roesler, 16
 Cycles of deposition: Hunt, 74n; Newberry, 74c
 Cycles of sedimentation: Williams (J L), 91
 Dakota sand: Huntley, 15a
 Dalles of the St. Croix: Berkey, 98

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- Delaware: Miller (B L), 06
 Delta deposits: Barrell, 12a
 Devonian: Clarke (J M), 08
 Devonian history of New York and eastern North America: Clarke (J M), 08b
 District of Columbia: Darton, 96j, 01; McGee, 98
 Eastern United States: Hollick, 93
 Florida: Cox, 96; Matson, 09b, 13a; Smith (E A), 81a; Vaughan, 10b, c, 14c
 east coast: Sellards, 16a, b
 southern: Sellards, 15
 Tallahassee region: Sellards, 17a
 western: Sellards, 18a
 Florida reef tract: Vaughan, 14a
 General: Dana (J D), 56a, b, 63c; Dawson (J W), 74; Hunt, 61a; Keyes, 14d; Le Conte, 95; Schuchert, 14b; White (C A), 86b
 Georgia, Appalachian Valley: Shearer, 18a
 Ellijay quadrangle: LaForge, 13
 Rome quadrangle: Hayes, 02
 Silurian: McCallie, 08a
 Geosyncline, western interior: Van Tuyl, 17
 Glacial: Fairchild, 13
 Glacialice sheet: Upham, 11a
 Grand Canyon of the Colorado: Darton, 17b; Davis (W M), 01
 Great Basin: Ball (S H), 07
 Great Lakes: Emery (R), —; Goldthwait, 07; Newberry, 89e; Spencer (J W), 95c; Taylor (F B), 97, 07, 13, 13a; Upham, 05d
 Great Plains region: Keyes, 15p
 Greenland: Böggild, 17; Julianehaab region: Ussing, 11
 Guatemala, Alta Vera Paz: Sapper, 01a
 Gulf of Mexico: Hilgard, 71a
 Hawaii: Jaggard, 13
 Hudson and Champlain valleys: Peet, 04
 Hudson Bay region (east coast): Leith, 10a
 Hudson Valley: Davis (W M), 92
 Idaho: Umpleby, 12a
 Boise region: Lindgren, 98, 98a
 Coeur d'Alene district: Ransome, 08
 Lemhi Co.: Umpleby, 13
 Nampa quadrangle: Lindren, 04
 Silver City quadrangle: Lindgren, 04a
 Snake River plains: Russell, 02a
 Illinois: Rolfe, 03, 08a
 Belleville and Breese quadrangles: Udden, 15
 Danville quadrangle: Campbell (M R), 00
 Galena-Elizabeth quadrangles: Shaw (E W), 16; Trowbridge, 16
 Murphysboro and Herrin quadrangles: Shaw, (E W), 12b
 northern: Udden, 95
 northwestern: Bain, 05a; northwestern: Carman, 09
 Patoka quadrangle, Fuller, 04
 St. Louis area: Fenneman, 09, 11
 Starved Rock State Park: Cady, 18
 Tallula and Springfield quadrangles: Shaw (E W), 13a
 Indiana: Blatchley (W S), 04; Hopkins (T C), 04a
 Danville quadrangle: Campbell (M R), 00
 Ditney quadrangle: Fuller, 02

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- Indiana: Flatwoods region, Owen and Monroe cos.: Malott, 15
 glacial: Wood (H W), 16
 Patoka quadrangle, Fuller, 04
 Indian Territory: Taff, 06
 Iowa: Bain, 95f; Calvin, 98d
 channel of Mississippi River: Calvin, 07
 Des Moines Valley: Lees, 16
 eastern: Carman, 09
 Elk Point quadrangle: Todd, 08
 Galena quadrangle: Shaw (E W), 16
 Johnson Co.: Calvin, 85a
 Lancaster quadrangle: Grant (U S), 07
 northeastern: McGee, 91
 northwestern: Carman, 17
 Pleistocene: Calvin, 97f
 Jackson and Vicksburg deposits, Ala. and Miss.: Cooke (C W), 18a
 Jamaica: Hill (R T), 99; Spencer (J W), 98c
 Kansas: Moore (R C), 17; Wooster, 00, 14
 Carboniferous: Beede, 09a
 crystalline rocks: Moore (R C), 18a
 Independence quadrangle: Schrader, 08
 Joplin district: Smith (W S T), 07a
 Leavenworth quadrangle: Hinds, 17
 Pleistocene: Todd, 18
 Wakarusa Creek: Todd, 11a
 Kentucky, Jefferson Co.: Butts, 15
 Kenova quadrangle: Phalen, 12
 London quadrangle: Campbell (M R), 98a
 north central: Miller (A M), 16
 Richmond quadrangle: Campbell (M R), 98
 western: Crider, 15
 Klamath Mountains: Diller, 01a, 02a
 Lake Agassiz: Upham, 96
 Lake Bonneville: Gilbert, 90
 Lake Champlain: Perkins (G H), 12a
 Lake Lahontan: Jones (J C), 14a
 Lake Superior: Bell (R), 99a
 Lake Superior region: Van Hise, 11
 Laurentian basin: Russell, 93c
 Lesser Antilles: Hill (R T), 03c
 Louisiana: Harris, 02a; Veatch (A C), 06e, g
 Maine, Eastport quadrangle: Bastin, 14
 Fox Islands: Smith (G O), 96, 02a
 Mount Desert Island: Davis (W M), 94e
 Penobscot Bay quadrangle: Smith (G O), 07d
 Portland and Casco Bay quadrangles: Katz, 13
 Rockland quadrangle: Bastin, 08a
 southern: Clapp (F G), 09
 southwestern: Emmons (W H), 10a
 Waterville: Little (H P), 17a
 Maryland: Md G S, 12; Miller (B L), 06; Shattuck, 06, 06a
 Alleghany Co.: O'Harra, 00
 Anno Arundel Co.: Little, 17
 Baltimore area: Uhler, 83
 Calvert Co.: Shattuck, 07
 Cecil Co.: Shattuck, 02
 Choptank quadrangle: Miller (B L), 12
 Coastal Plain: Davis (W M), 07a
 Garrett Co.: Martin (G C), 02
 Nomini quadrangle: Darton, 96a
 Paleozoic: Willis, 00

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- Maryland: Patuxent quadrangle: Shattuck, 07c
 Pawpaw and Haucock quadrangles: Stose, 12b
 St. Marys Co.: Shattuck, 07a
 Tolchester quadrangle: Miller (B L), 17
 Upper Cretaceous: Clark (W B), 16
 Washington quadrangles: Darton, 01
- Massachusetts: Mansfield, 06a
 Blue Hills complex: Crosby, 98
 Boston and vicinity: Crosby, 03
 Massachusetts, Boston Basin: Bouvé, 84;
 Crosby, 90; postglacial: Shimer, 18
 Cape Cod district: Shaler, 98a
 Charles River: Clapp (F G), 01
 Diamond Hill-Cumberland district: Warren (C H), 14
 eastern: Loughlin, 11
 Mount Greylock: Dale, 06
 Narragansett Basin: Shaler, 99
 Nashua Valley: Crosby, 99a
 western: Emerson (B K), 98a
- Mesozoic, southern North America: Stanton, 18
 Mesozoic floras of North and South America: Knowlton, 18
- Mexico: Aguilera, 98a; Haarman, 17
 Chihuahua, Sierra Rica country: Caracristi, 09
 Coahuila: Haarman, 13
 coastal area: Dumble, 15c
 Durango, Sierra de El Oro: Roldán, 11
 eastern: Dumble, 15a
 Hidalgo, Tulancingo: Galvez, 16; Villarello, 02
 Ixmiquilpan Valley, Hidalgo: Paredes, 09b
 Pachuca district, Hidalgo: Pope, 11
 Promontorio district, Durango: Lincoln, 08
 Sonora, Cananea district: Emmons (S F), 10a
 Tampico embayment area: Dumble, 18
 Velardeña district, Durango: Spurr, 08a
- Michigan: Lane, 09, 09a
 Detroit district: Sherzer, 17
 Menominee district: Bayley, 04; Van Hise, 00
 Upper Peninsula: Lane, 16; Russell, 05a
 Washtenaw Co.: Winchell (A), 81a
- Michigan Basin: Grimsley, 04c
- Mid-Cretaceous geography: Berry, 06a
- Minnesota, glacial: Upham, 83
 Little Falls: Winchell (N H), 02c
 Mesabi district: Leith, 03
 Mesabi range: Grant (U S), 98
 Minneapolis-St. Paul district: Sardeson, 16
 northeastern: Winchell (A), 87
 Redstone region: Sardeson, 08a
 southern: Hall (C W), 11a
 Vermilion district: Clements, 03
- Mississippi: Lowe, 15; northern and central, Pliocene: Shaw, 18
 Mississippi delta: Forshey, 74
 Mississippi drainage system: Westgate, 93
 Mississippi embayment: Berry, 15
 Mississippi River: Calvin, 07; Farnsworth, 01;
 Spencer (J W), 83b
 Mississippi Valley, lower: Hilgard, 69a; upper: Bain, 06; Mead (D W), 94; late Paleozoic: Van Tuyl, 18c
- Mississippi-Missouri: Claypole, 89a

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- Missouri: Branson, 18a; Hinds, 15; Shepard, 07; Swallow, 73; Winslow, 95
 barite districts: Tarr (W A), 18
 Granby area: Buckley, 06
 Joplin district: Smith (W S T), 07a
 Jackson Co.: McCourt, 17
 Joplin district: Siebenthal, 05
 Leavenworth quadrangle: Hinds, 17
 Ozark region: Broadhead, 89; Park, 04
 Paleozoic: Broadhead, 94
 St. Louis area: Fenneman, 09
 St. Louis quadrangle: Fenneman, 11
 Smithville quadrangle: Hinds, 17
 southeastern: Buckley, 09; Marbut, 02
 southwestern: Schmidt, 74
- Missouri River: Bauer, 15; Broadhead, 89a; Todd, 14; West, 83
- Missouri River region: Upham, 96d
- Montana, Boulder batholith: Billingsley, 15, 17
 Butte district: Atwood, 16
 Castle Mountain district: Weed, 96a
 Cretaceous: Thom, 17; and Tertiary: Stanton, 09
 eastern: Rowe, 16
 Elkhorn Mountains: Stone (R W), 11
 Fort Benton quadrangle: Weed, 99
 Garrison-Philipsburg fields: Pardee, 17
 Glacier National Park: Campbell (M R), 14b
 Judith Mountains: Weed, 98
 Little Belt Mountains: Weed, 99a, 00
 Marysville district: Barrell, 07
 northern and central: Mortson, 76
 Philipsburg quadrangle: Calkins, 15; Emmons (W H), 13b
 southwestern: Pardee, 13a
 Three Forks quadrangle: Peale, 96
- Morrison formation: Mook, 15
- Nebraska: Hicks, 90a
 Camp Clarke quadrangle: Darton, 03
 Elk Point quadrangle: Todd, 08
 Scotts Bluff quadrangle: Darton, 03a
 Sioux City region: Burchard, 04
- Neocene and Pleistocene: McGee, 91g
- Nevada, Big Smoky Valley: Meinzer, 17
 Bullfrog district: Ransome, 10c
 Contact district, Elko Co.: Schrader, 12
 Elko, Lander, and Eureka cos.: Emmons (W H), 10
 Goldfield district: Ransome, 09, 10a
 Great Basin: Ball (S H), 07
 Humboldt region: Louderback, 04a
 Lahontan Basin: Jones (J C), 14a; Russell, 85
 Reese River basin: Waring (G A), 18
 southeastern: Carpenter (E), 15
 Tonopah: Burgess, 09; Spurr, 03b, 05
 Virgin Valley region: Merriam (J C), 10b
 west central: Buwalda, 14b
 Yerington district: Knopf, 18a
- New Brunswick: Bailey (L W), 90a, 10; Matthew (G F), 08, 14
 Bathurst district: Young, 11a
 Curries Mountain: Bailey (L W), 10a
 St. John River: Bailey (L W), 83; Matthew (G F), 94d
- New England: Cleland, 06; Anon, 16c

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- New Hampshire: Hitchcock (C H), 74c, 75, 77a
 White Mountains: Dawson (J W), 62b
 Winnipissaukee Lake: Hitchcock (C H), 74c
 New Jersey: Hollick, 99b; Lewis, 15; Salisbury, 98a
Franklin Furnace quadrangle: Spencer (A C), 08d
 Lake Passaic: Salisbury, 95b
 Passaic Falls: Nelson, 92
 Passaic quadrangle: Darton, 08b
 Philadelphia district: Bascom, 09a
 Raritan quadrangle: Bayley, 14
 Trenton quadrangle: Bascom, 09b
 New Mexico: Jewett, 05; Keyes, 06b; Lindgren, 10
 Deming quadrangle: Darton, 17
 Gallup Basin: Kirk, 14
 Lake Valley district: Keyes, 08
 Luna Co.: Darton, 16
 Raton Mesa region: Lee (W T), 17
 Rio Grande Valley: Lee (W T), 07b, 09b
 Santa Rita region: Paige, 12d
 Silver City quadrangle: Paige, 16
 southern: Darton, 17a
 Tertiary peneplain: Robinson (H H), 07
 Tularosa Basin: Meinzer, 15
 New York: Miller (W J), 14
 Adirondack Mountains: Cushing, 05, 07; Kemp, 97b; Miller (W J), 17a; northern: Cushing, 05a; southern: Miller (W J), 13
 Blue Mountain quadrangle: Miller (W J), 17
 Broadalbin quadrangle: Miller (W J), 11b
 Catskill Mountains: Heilprin, 07
 Cayuga Lake valley: Nevius, 99a
 Chautauqua region: Tarr (R S), 96b
 Clinton Co.: Cushing, 01
 Devonian: Smith (B), 12
 eastern: Dale, 99
 Erie Co.: Houghton (F), 14
 Hudson Valley: Dale, 04a
 Lake Pleasant quadrangle: Miller (W J), 16a
 Long Island: Crosby, 00a, 08; Fuller, 14; Merrill (F J H), 86; Veatch (A C), 00c
 Manhattan Island: Newberry, 78e
 New York City: Berkey, 12a
 New York district: Merrill (F J H), 02
 Niagara quadrangle: Kindle, 13c
 North Creek quadrangle: Miller (W J), 14a
 Ogdensburg region: Cushing, 16
 Ordovician: Cushing, 08
 Paradox Lake quadrangle: Ogilvie, 05
 Peekskill district: Loveman, 11
 Pleistocene: Fairchild, 08, 13
 Poughkeepsie quadrangle: Gordon (C E), 11
 Rochester: Fairchild, 94c
 Saratoga quadrangle, glacial: Stoller, 16
 Saratoga Springs region: Cushing, 14
 Schoharie Valley: Grabau, 06
 southeastern: Berkey, 11
 South Onondaga: Schneider, 04
 Ten Mile River region: Crosby, 00b
 Watkins Glen-Cattonk district: Williams (H S), 09a
 western, in Silurian time: Hartnagel, 07b
 Niagara Falls: Gilbert, 95; Spencer (J W), 94e, 13c; Upham, 05d

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- Niagara Falls and Gorge: Taylor (F B), 13a
 Niagara Gorge and Great Lakes history: Taylor (F B), 13d
 Niagara River: Belt, 75; Gilbert, 90a
 Nicaragua, Canal route: Hayes, 99, 99a; lake region: Hayes, 99c
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 North American flora: Newberry, 80
 North Atlantic: Dawson (J W), 86
 North Carolina: Asheville quadrangle: Keith, 04
 Chapel Hill: Smith (J E), 14
 Coastal Plain: Clark (W B), 12, 12a
 Davidson Co.: Pogue, 09b; Cid district: Pogue, 10
 Gold Hill district: Laney, 10
 Nantahala quadrangle: Keith, 07
 Pisgah quadrangle: Keith, 07a
 Virgilina district: Laney, 17
 North Dakota: Leonard, 08b, 17; Willard, 08
 Bismarck quadrangle: Leonard, 12
 Maple River: Willard, 08
 south central: Leonard, 12b
 Tower quadrangle: Willard, 08
 Nova Scotia: DeWolfe, 06; Knight (O W), 11; Malcolm, 12; Matthew (G F), 08a
 Arisaig-Antigonish district: Williams (M Y), 11
 Gaspereau Valley: Haycock, 02
 Joggins section: Bell (W A), 14
 Shelburne Co.: Powers, 15a
 South Joggins: Dawson (J W), 54
 Ohio: Carney, 11a
 Cincinnati region: Feuneman, 16
 Columbus quadrangle: Hubbard (G D), 15
 Kenova quadrangle: Phalen, 12
 Lieking Co.: Herrick, 87
 Oklahoma: Gould, 11, 11b; Wallis, 15
 Arbuckle Mountains: Reeds, 10
 Carboniferous: Beede, 09a
 Carter Co.: Wegemann, 15b
 northeastern: Snider, 12
 southern: Powers, 17b
 Tahlequah quadrangle: Taff, 05
 Tahlequah region: Woodworth, 12
 travertine deposits: Emig, 17
 Ontario, central: Wilson (A W G), 01
 Lake Wendigokan region: Moore (E S), 09c
 Nipigon Basin: Wilson (A W G), 09, 10
 Pleistocene: Coleman, 09c; Taylor (F B), 13b
 Rainy Lake: Lawson, 13d
 western: Coleman, 98b
 Ordovician meteorology: Sardeson, 00
 Ordovician, Silurian, and Devonian: Grabau, 00a
 Oregon, Cascades: Smith (W D), 17
 Columbia River gorge region: Williams (I A), 16a
 Crater Lake: Diller, 12
 Curry Co.: Butler (G M), 16
 Port Orford quadrangle: Diller, 03
 Sumpter quadrangle: Pardee, 14
 Tertiary: Arnold, 13
 Wallowa Mountains: Smith (W D), 18
 Ozark uplift: Broadhead, 89; Siebenthal, 15

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Pacific coast region: Becker, 87c; Diller, 94; Smith (J P), 94; Tolman, 15; Tertiary: Arnold, 09b

Paleozoic: Rogers (H D), 57b; Ruedemann, 08; Ulrich, 11a

Panama: Hershey, 01d

Panama Isthmus: Hill (R T), 98c

Pennsylvania: Claypole, 90a; Davis (W M), 89f; Leeds, 71; Stone (R W), 08b

Amity quadrangle: Clapp (F G), 07a

anthracite region: Wistar (I J), 96

Barnesboro and Patton quadrangles: Campbell (M R), 13a

Beaver quadrangle: Woolsey, 05

Burgettstown and Carnegie quadrangles: Shaw (E W), 11d

Chester Co., Doe Run-Avondale region: Bliss (E F), 16

Claysville quadrangle: Munn, 12

Coatesville quadrangle: Bliss (E F), 14

Ebensburg quadrangle: Butts, 05b

Elders Ridge quadrangle: Stone (R W), 05a

Elkland quadrangle: Fuller, 03a

Foxburg and Clarion quadrangles: Shaw (E W), 11e

Gaines quadrangle: Fuller, 03

Johnstown quadrangle: Pbalen, 10

Kittanning quadrangle: Butts, 04

Latrobe quadrangle: Campbell (M R), 04

Lehigh Co.: Miller (B L), 14

Masontown quadrangle: Campbell (M R), 02a

Mercersburg-Chambersburg district: Stose, 09

middle: Claypole, 84k

Pawpaw and Hancock quadrangles: Stose, 12b

Philadelphia area: Bascom, 97, 09a; Lewis (H C), 83b

Piedmont district: Bascom, 05

Rogersville quadrangle: Clapp (F G), 07b

Rural Valley quadrangle: Butts, 05a

Sewickley quadrangle: Munn, 11

Susquehanna River: Mathews, 17

Tioga quadrangle: Fuller, 03a

Trenton quadrangle: Bascom, 09b

Uniontown quadrangle: Campbell (M R), 02a

Warren quadrangle: Butts, 10

Waynesburg quadrangle: Stone (R W), 05

western: Butts, 08a

Porto Rico: Berkey, 15a; Reeds, 16

Pre-Cambrian: Coleman, 15

Puget Sound basin: Kimball, 97

Quebec, Beauce Co.: Tyrrell, 15

Coleraine area: Knox, 18

Haliburton and Bancroft areas: Adams (F D), 10d

Kewagama Lake area: Wilson (M E), 13c

Lake Timiskaming area: Wilson (M E), 10a

Lake St. John district: Dresser, 16

Montreal Island: Adams (F D), 04

Mount Royal: Buchan, 01

Northern Transcontinental Railway, Hervey Junction-Doucet: Bancroft (J A), 17

St. Bruno Mountain: Dresser, 10a; Hunt, 71k

Southern: Dresser, 12, 13

Thetford-Black Lake district (Coleraine sheet): Knox, 17

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Rhode Island: Emerson (B K), 17

Diamond Hill-Cumberland district: Warren (C H), 14

Narragansett Basin: Shaler, 99

Rocky Mountain region: Ashley, 15a; Lee (W T), 15b; Tomlinson, 17

Canada: Allan, 17; Dawson (G M), 01

Cretaceous-Tertiary time: Ashley, 15b

southern, Mesozoic: Lee (W T), 18

Saint Croix Dalles: Upham, 00

Saint Croix River: Upham, 96q

St. Peter time: Berkey, 06

Saskatchewan, Amisk Lake district: Bruce, 18; Wood Mountain - Willowbunch area: Rose, 16

Sierra Nevada: Lindgren, 96c

Sombrero, West Indies: Julien, 66

South Carolina: Rogers (G S), 14a

coast region: Shaler, 70a

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- New Mexico: Stone (G H), 01a
- New York: Carney, 07a; Clarke (J M), 08; Fairchild, 09a, 12a, 13, 16a; Jones (C C), 07; Ramsay, 59; Spencer (J W), 12a; Upham, 89
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New York district: Merrill (F J H), 02; Wilson (J H), 06a

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Rochester district: Fairchild, 95b; Giles, 18a

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Wilmington area: Hubbard (G D), 18

Woodbury: Richardson (C H), 14a

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 Boise region: Lindgren, 98, 98a
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 Custer Co.: Umpleby, 13b
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 Loon Creek district: Umpleby, 13a
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 99a, 00
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 08b; Weed, 96b
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 Marysville district: Barrell, 07
 Musselshell Valley: Bowen (C F), 18c
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 Reese River basin: Waring (G A), 18
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 New Brunswick: Bailey (L W), 05a; Ellis, 06c,
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 07b, c, 08a
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 Raton Mesa region: Mertie, 13a
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 anorthosite body: Bowen (N L), 17b; Cushing, 17
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 syenite-granite series: Miller (W J), 18b
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 Little Falls quadrangle: Cushing, 05
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 New York district: Merrill (F J H), 02
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 Dan River field: Stone (R W), 12a
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 Grenville region: Ells, 01a; Harrington, 77
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 Matachewan area: Burrows (A G), 18
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 Columbia River gorge region: Williams (I A), 16a
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 Ozark region: Adams (G I), 01
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 Pele's hair: Dana (J D), 79b
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 Coatesville quadrangle: Bliss (E F), 14
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 Lancaster Co.: Frazer, 79
 Mercersburg-Chambersburg district: Stose, 09
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 Bell River region: Wilson (M E), 14
 Brome Mountain: Dresser, 02a, 04b, 06d
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 Magdalen Islands: Clarke (J M), 11b
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 Montereian Hills: Adams (F D), 05, 13a
 Montreal area: Bigsby, 25; Ellis, 96; Harvie, 10; Lacroix, 90
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 Yamaska Mountain: Young (G A), 04
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 Diamond Hill-Cumberland district: Warren (C H), 14
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 Camp Alunite: Hill (R T), 08d
 Cedar Range district: Tiernan, 17
 De Lamar mines, Lincoln Co.: Miller (G W), 08a
 desert mines: Everettte, 08
 Elko, Lander, and Eureka cos.: Emmons (W H), 10
 Ely district, Giroux mines: Giroux, 06
 Esmeralda Co., Klondike district: Spurr, 06a
 Fairview district: Rice (C T), 06d; Zalinski, 07a
 Goldfield district: Barnes, 13; Becker (A), 08; Collins (E A), 06, 07; Cutler, 11; Hastings, 06a, b; Jennings (E P), 05a; Lincoln, 07a; Locke, 12; Ransome, 07, 07a, 09, 10a; Rice (C T), 11, 11b; Rickard, 08a; Shaw (E S), 11; Spurr, 07b; Taft, 06; Winchell (H V), 05
 Hornsilver district: Ransome, 09a
 Humboldt Co.: Ransome, 09d, e
 in quartzites of eastern Nev.: Weeks, 02b
 Jarbidge district: Schrader, 12; Sweetser, 10
 Kennedy district: Klopstock, 13
 Lida district: Root, 09
 Lyon and Washoe cos.: Hill (J M), 11
 Manhattan district: Emmons (W H), 07; Ferguson (H G), 17; Rice (C T), 06c
 National district: Lindgren, 15; Winchell (A N), 12a
 Nye Co., Golden Arrow district: Ferguson (H G), 16; Manhattan placers: Jones (C C), 09
 Osceola district: Weeks, 08
 Palmyra district: Cutler, 12
 Pioche district: Abbott (J W), 07; Bell, (R N), 11; Pack, 06

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Economic geology—Continued.

- Gold: Rawhide district: Gehrmann, 08; Del Mar, 08; Whytock, 09, 10
 Round Mountain, Nye Co.: Loftus, 09; Packard (G A), 07; Ransome, 09b
 Silver Peak quadrangle: Spurr, 06b
 southwestern Nev.: Ball (S H), 06a, 07
 Tonopah district: Jenney, 09c; Johnson (A T), 09; Rice (C T), 06, 06a, 11a, b; Spurr, 05; Taft, 06
 Wonder district: Zalinski, 07b
 Gold and silver at Fairview: Rice (C T), 06d
 Gold tellurides: Sharwood, 07a
 Gold-platinum-palladium lode, Clark Co.: Knopf, 15
Goldfield district: Cutler, 15; Dominian, 04; Draper, 04; Jennings (E P), 05a; Rickard, 15; Spurr, 04b, 05b
 Goldfield type of ore occurrence: Hill (R T), 08b, c; Lewis (J V), 09a
 Goodsprings district, Clark Co.: Nevius, 15
 Gypsum, Lyon Co.: Read, 12; **northwestern Nev.:** Louderback, 03, 04
 Hornsilver district: Ransome, 09a
 Humboldt Co.: Ransome, 09d, e
 Iron Amarilla district: Hershey, 08c
 Barth deposit: Jones (J C), 13
 Dayton: Harder, 10d
 Jarbidge, Contact, and Elk Mountain mining districts: Schrader, 12
 Jarbidge mining district: Buckley, 11b; Sweetser, 10
 Kennedy mining district: Klopstock, 13
 Kimberly camp, Battle Mountain region: Carpenter (J A), 10
 Klondike district: Spurr, 06a
 Lander mining district: Martin (A H), 10e
 Lead, Clark Co., Yellow Pine district: Gregory (N B), 10a; Hill (J M), 13a
 Eureka district: Blake, 79; Chance, 08; Curtis, 84; Ingalls (W R), 07b
 Lida mining district: Root, 09
 Lincoln Co., Bristol mine: Goodale, 10
 Pioche: Abbott (J W), 07; Pack (F J), 06
 White Pine district: Larsh, 09
 Lone Mountain district, near Tonopah: Lakes, 04d
 Lucky Boy mine, Esmeralda Co.: Wroth, 08
 Lyon Co., oil prospecting: Anderson (R), 09b
 Magnesite: Gale, 14f
 Manganese: Harder, 10
 Clark Co.: Hale (F A), 18a
 Golconda: Penrose, 93
 Manhattan district: Emmons (W H), 07; Ferguson (H G), 17; Jenney, 09b; Rice (C T), 06c; White Caps mine: Dynan, 16
 Manhattan placers, Nye Co.: Jones (C C), 09a
 Marble, White Pine Co.: Darton, 08a
 Mason mining district, Lyon Co.: Zehring, 09
 Mineral Hill district, Eureka Co.: Maynard, 15; Toll, 12
 Mining developments: Selwyn-Brown, 08
 Mining districts: Wheeler (G M), 72a, 74a
 Montezuma district: Stretch, 04
 National mining district: Lindgren, 11c, 15; Winchell (A N), 12a

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Economic geology—Continued.

- Nevada-Douglas mines, Lyon Co.: Read, 12
 Nickel: Newberry (S B), 84
 Nitrate deposits: Gale, 12; Humboldt Co.: Van Wagenen, 02
 Northwestern Nev.: Hill (J M), 15
 Ore shoots: Chase (E E), 09
 Osceola mining district, White Pine Co.: Weeks, 08
 Petroleum: MacFarland, 09
 Lyon Co., prospecting: Anderson (R), 09b
 Phosphate, Amarilla district: Hershey, 08c
 Pioche district, Lincoln Co.: Abbot (J W), 07; Bell (R N), 11; Maynard, 91; Pack (F J), 06; Half-Moon mine: Wiltsee, 93; Prince Consolidated mine: Zalinski, 13
 Platinum, Boss mine, Yellow Pine district: Kennedy, 15
 Clark Co.: Bancroft (H C), 10a
 Goodsprings: Crampton, 16
 Platinum-gold lode, Yellow Pine district: Knopf, 14d, 15c
 Potash: Free, 12a
 Railroad Valley: Free, 13
 search for: Gale, 13a
 Potash tests, Columbus Marsh: Gale, 14c
 Prince Consolidated mines: Jessup, 13
 Quartz veins of Silver Peak: Hastings, 06
 Quicksilver: Blake, 78
 Railroad Valley: Sheldon (G L), 12
 Ramsey, Talapoosa, and White Horse districts, Lyon and Washoe cos.: Hill (J M), 11
 Rawhide district, Esmeralda Co.: Del Mar, 08; Gehrmann, 08; Whytock, 09, 10; Wolcott, 09
 Ray mining district: Turner, 08b
 Reno region, oil prospecting: Anderson (R), 09a
 Robinson mining district: Lawson, 06; Lindgren, 07a
 Rochester district: Jones (J C), 13a; Schrader, 14c, 16b
 Round Mountain, Nye Co.: Loftus, 09; Packard (G A), 07; Ransome, 09b
 Salines, Silver Peak Marsh: Dole, 13
 Santa Fe district: McCormick, 01
 Shelbourne Range, White Pine Co.: Wiel, 04
 Silver: Jackson, 65d
 Antelope district: Schrader, 13
 Austin: Taylor (H B), 12
 Bullfrog district: Ransome, 10c
 Comstock lode: Becker, 82a
 desert mines: Everette, 08
 Elko, Lander, and Eureka cos.: Emmons (W H), 10
 Esmeralda Co., Klondike district: Spurr, 06a
 Eureka district: Chanee, 08; Curtis, 84; Ingalls (W R), 07b
 Fairview district: Rice (C T), 06d; Zaiinski, 07a
 halogen salts, Wonder: Burgess, 17
 Hornsilver district: Ransome, 09a
 Humboldt Co.: Ransome, 09d, e
 Lander district: Martin (A H), 10e
 Lida district: Root, 09
 Kennedy district: Klopstock, 13
 Lincoln Co., Bristol mine: Goodale, 10

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- Silver: Magdalena district: Haddon, 06
 Mineral Hill district, Eureka Co.: Maynard, 15; Toll, 12
 Palmyra district: Cutler, 12
 Pioche district: Abbott (J W), 07; Bell (R N), 11; Durand, 73c; Pack, (F J), 06
 Rawhide: Whytock, 10
 Silver Peak quadrangle: Spurr, 06b
 southwestern Nev.: Ball (S H), 06a, 07
 Tonopah district: Burgess, 11; Eakle, 12; Jenney, 09c; Johnson (A T), 09
 Ward camp: Plate, 07
 Washoe mines: Blake (W P), 60
 White Pine district: Clayton, 70a; Larsh, 09
 Wonder district: Ritter, 09; Young (J W), 18; Zalinski, 07b
 Yellow Pine district: Gregory (N B), 10a
 Silver Peak quadrangle: Spurr, 04a, e, 06b
 Silver Peak quartz veins: Hastings, 06
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 Southwestern Nev.: Ball (S H), 06a, 07
 Steamboat Springs: Le Conte, 83; metallic sulphides: Lindgren, 03g; stibnite: Lindgren, 05f
 Sulphur: Fulton (R L), 99
 Rabbit Hole Springs: Adams (G I), 04b
 Silver Peak quadrangle: Spurr, 06b
 Tin, Lander Co.: Knopf, 16
 Tonopah district: Balliet, 14; Burgess, 09, 11; Easton, 02; Jenney, 09c; Johnson (A T), 09; Knapp, 01; Locke, 11; Rice (C T), 06, 06a, 11a, b; Spurr, 03a, b, e, 05, 05c, e, 11, 15a; Taft, 06; Anon, 16; genesis: Bastin, 18
 Tungsten, eastern Nev.: Weeks, 01, 03
 Osceola: Smith (F D), 02
 White Pine Co.: Weeks, 08b
 Ward camp: Plate, 07
 Washoe district: Becker, 82, 82a; Blake, 64
 King (C), 70
 Wedekind ore deposits: Wendeborn, 04; hydrothermal activity: Morris (H G), 03
 Western Nev.: Conkling, 78; Spurr, 05d
 White Pine district: Hague (A), 70; Larsh, 09
 Wonder district: Ritter, 09; Zalinski, 07b
 Wood tin, northern Nev.: Knopf, 16a
 Yellow Pine district, Clark Co.: Gregory (N B), 10a; Hale (F A), 18; Hill (J M), 14a; Palmer (L A), 16b
 Yerington copper district: Carpenter, 10a; Durand (C S), 10; Jennings, 07, 08, 09; Knopf, 18a; Ransome, 09c
 Yerington-Buckskin district: Goodale, 11
 Zinc, Pioche: Abbott (J W), 07
 southern Nev.: White (Doug.), 09
 Spring Mountains: Bain, 06b
 Yellow Pine district: Gregory (N B), 10a; Hill (J M), 13a, 14a; Palmer (L A), 16b

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- Amyzon beds: Gopo, 79j
 Antelope district: Schrader, 13
 Arabia district: Knopf, 18b
 Big Smoky Valley: Meinzer, 17
 Bullfrog district: Ransome, 10c
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- Cedar Mountain region: Merriam, 16
 Cedar Range, Nye Co.: Stevens (G R), 17
 Clayton Valley: Meinzer, 17
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 Eastern Nev.: Hill (J M), 16; Paleozoic: Hershey, 12b
 Egan Canyon district: Emmons (S F), 70
 Elko Co.: Schrader, 12
 Elko, Lander, and Eureka cos.: Emmons (W H), 10
 Ely district: Spencer (A C), 17
 Esmeralda Co.: Turner, 02
 Esmeralda formation: Turner, 00, 00d
 Eureka district: Curtis, 84, 84b; Hague (A), 83, 85a, 92; Keyes (W S), 79
 General: Engelmann, 76; Guillemain-Tarayre, 71; Hague (A), 77; Howell (E E), 75; King (C), 78a; Louderback, 01; Meek, 60a; Spurr, 03; Wheeler (G M), 72; Whitney, 66e
 Fairview district: Greenan, 14
 Gold-bearing quartzites, eastern Nev.: Weeks, 02b
 Goldfield district: Hastings, 06a, b; Jennings (E P), 05a; Ransome, 09, 10a
 Great Basin region: Turner, 01a
 Humboldt region: Louderback, 04a
 Igneous rocks of post-Jurassic age: Ball (S H), 08a
 Jarbidge, Contact, and Elk Mountain mining districts: Schrader, 12
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 Manhattan district: Ferguson (H G), 17
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 Northwestern Nev.: Hill (J M), 15
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 Osino fish beds: Cope, 72u
 Puebla Range, Humboldt Co.: Blake (J), 73c
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 Santa Fe district: McCormick, 01
 Silurian: Whitney, 67e
 Silver Peak district: Turner, 00g
 Silver Peak quadrangle: Turner, 09
 Stewart and Ione valleys: Buwalda, 14b
 Tertiary mammal beds, Virgin Valley and Thousand Creek: Merriam, 10b, 11c
 Tertiary river channel near Carson City: Reid (J A), 08d
 Tonopah district: Burgess, 09; Spurr, 04f, 05, 11, 15a; Anon, 16
 Toyabe Range: Emmons (S F), 70
 Triassic: Smith (J P), 04a, 07
 Truckee region east of the Sierra Nevada: Louderback, 08
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 Washoe district: Becker, 82a; Blake (W P), 64; King (C), 70
 Western Nev.: Conkling, 78
 White Pine district: Clayton, 70a; Hague (A), 70
 Yellow Pine district, Clarke Co.: Hale (F A), 18
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- Albitite dikes: Ransome, 11d

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 Covellite, Yerington and Ruth: Rogers (A F), 11
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 Ely district: Spencer (A C), 17
 Erythrite: Blake (W P), 85b
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 General: Conkling, 78a; Hoffmann, 78; Stretch, 67
 Goldfield district: Ransome, 09
 Gypsum and anhydrite, Ludwig mine, Lyon Co.: Jones (J C), 12a; Rogers (A F), 12c
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 Hydrozincite, Lincoln Co.: Ford (W E), 16
 Iodyrite, Toponah: Kraus, 09, 13a
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 Natrojarosite: Hillebrand, 02
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 Opal: Kunz, 12
 Orthoclase-bearing veins from Rawhide: Rogers (A F), 11c
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 Rochester district: Schrader, 14c
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 Vashegyite, Manhattan: Wherry, 16e
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- Paleontology.*
 Aplodont rodent from Tertiary: Furlong, 10
 Biped tracks: Cope, 83q
 Cambrian fauna: Whitney, 72
 Cambrian fossils, Pioche Mountains: Pack, 06a
 Carnivora, Tertiary, John Day region: Merriam, 06b
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 Devonian: Meck, 60c, 70e
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 Mammal-bearing beds of middle Tertiary Age: Merriam (J C), 07a
 Mammalia, Pleistocene, Astor Pass: Merriam (J C), 15f
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 Pisces, Osino: Cope, 73v; Silver Peak district: Blake (W P), 67f
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 Goldfield district: Hastings, 06a; Ransome, 09
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 Quartz muscovite rock, Belmont: Spurr, 00d
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 Silver Peak quadrangle: Spurr, 06b; Turner, 09
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 Washoe district: Beckor, 82a, 87; Hague, 85
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General: Bell (R), 89b; Blue, 92, 93, 94, 95, 96, 97, 98, 99, 00; Bonnycastle, 29; Coleman, 93; Corkill, 10; Gibson, 01, 07; Ont R Com, 90; Rottermund, 56, 57; Willmott, 83
Gold: Bell (J M), 13; Blue, 94; Coleman, 95, 96a; Corkill, 06; Lett, 13; Tyrrell, 13a
 Algoma: Crosby, 02a
 Beatty-Munro area: Hopkins (P E), 15a
 Benoit township: Burrows (A G), 17a
 Big Duck Lake: Hopkins (P E), 15
 Boston Creek area: Burrows (A G), 16, 16b
 Cripple Creek area: Bruce, 12a
 Deloro: Wells, 97
 Dryden area, district of Kenora: Thomson, 17
 eastern Ont.: Knight (C W), 05a; Miller (W G), 02
 Ganthier township: Burrows (A G), 17b
 Goodfish Lake area: Burrows (A G), 16a, b
 Haliburton area: Adams (F D), 00a
 Hastings district: Chapman (E J), 72a; Hunt, 67; Michel, 67; Vennor, 72a; Wallbridge, 69
 Kirkland Lake district: Bateman, 17; Burrows (A G), 14; Hardinge, 14; Hore, 13c; Spearman, 13, 14
 Kowkash area: Hopkins (P E), 15b, 16a, 17
 Lake Abitibi area: Baker (M B), 09; Miller (W G), 07
 Lake Nipigon-Clay Lake region: Collins (W H), 09a
Lake of the Woods: Coste, 85; Douglas, 95; McKellar, 99; Rickard, 97a
Lake of the Woods, Manitou, and Dryden: Parsons (A L), 11
 Larder Lake district: Brock, 07; Wilson (M E), 10, 12
 Long Lake mine: Baker (M B), 17
 lower Seine River: Bow, 99
 McArthur township: Hopkins, 12
 Marmora: Rothwell, 81
 Matachewan area: Burrows (A G), 18
 Michipicoten district: Bell (R), 99; Clarke (C H), 03; Willmott, 98a
 Nipigon Basin: Wilson (A W G), 10
 northwestern Ont.: Dron, 02
 Peterborough Co.: Chapman, 94
 Porcupine district: Bacz, 11, 12; Burrows (A G), 11, 12, 13, 15; Brock, 10a; Carter (W E H), 10; Davis (H P), 11; Dobbs, 14; Dulieux, 13; Fleming, 11; Gray, 10a; Hassan, 10; Hatch, 10; Hay (A M), 10; Hore, 10d-h, 11a, b, 12a, f, 13a, f, h; Knight (C W), 11; Liudsey, 11; Loring, 11; McDonald (P B), 11; MacLean, 12; Meyer (R A), 11; Miller (W G), 10; Shaw (S F), 11; Simon, 10; Stansfield, 11; Tyrrell, 15d; Whitman, 15
 pre-Cambrian: Tyrrell, 15b
 Rainy Lake district: Coleman, 95; Taylor (W W), 94

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Economic geology—Continued.

- Gold:** Rainy River field: Fleming, 09; Hille, 95, 08a; Merritt, 97; Winchell (H V), 97
 Rickard township: Hopkins (P E), 18b
 Sturgeon Lake district: Moore (E S), 11a
 Swastika area: Bruce, 12, 14; Burrows (A G), 14
 Thunder Bay district: Hille, 08a; McInnes, 99; Moore (E J), 10a
 Timiskaming district: Burrows (A G), 14
 Vermilion River: Coleman, 01; Evans (J W), 99; Gracey, 98
 western Ont.: Bain (J W), 99; Brent, 03; Coleman, 96, 96d, 97, 97b, 98; Collins (W H), 08; Hille, 97, 05; McKellar, 99
 West Shiningtree district: Collins (W H), 12; Hodge (W R), 12; Stewart (R B), 12, 13a
 Wabigoon Lake: Brinsmade, 10a
 Whiskey Lake area: Coleman, 13a
 Woman River area: Allen (R C), 09a
Gold quartz veins, Michipicoten district: Means, 14
 Gowganda district: Collins (W H), 09, 13; Colvocoresses, 10; Iseman, 10; West, 09
 Gowganda to Porcupine area: McMillan, 12
 Graphite: Bateman, 05; Ells, 04a; Lamb, 08; Ottawa Co.: Vennor, 74
 Grenville sheet: Ells, 01a
 Haileybury district, Lake Timiskaming: Miller (W G), 03b
 Haliburton area: Adams (F D), 98, 00a
 Hastings Co.: Macfarlane, 66; Wallbridge, 69
Iron: Blue, 93; Collins (W H), 06; Corkill, 06; Dewey, 84; Hille, 07; Ives, 88; Lindeman, 07, 13a; Mackenzie, 08; Merritt, 92; Miller (W G), 01b; Robinson (A H A), 17; Thompson (P), 06; Willmott, 08
 Animikie range: Silver, 06
 bog ore, English River: Moore (E S), 09a; Thunder Bay district: Moore (E J), 10a
 Black Sturgeon region: Coleman, 09a
 Bostou township: Miller (W G), 05a
 central Ont.: Chapman, 86
 eastern Ont.: Ingall, 96, 01a
 Glendower, Frontenac Co.: Miller (W G), 95
 Gunflint area: Parsons (A L), 16
 Gunflint Lake district: Van Hise, 11
 Haliburton area: Barlow, 97
 Hastings Co.: Wallbridge, 69
 hematite, Little Current, Georgian Bay: Mills (S D), 05; Wallbridge, Hastings Co.: Chapman, 86a
 Hunter Island: Parsons (A L), 16
 Hutton district: Coleman, 04a; Culbert, 04
 in Huronian quartzite: Hoffman, 91
 Lake Nipigon ranges: Bain (J W), 01; Coleman, 07, 08e; Moore (E S), 07; Wilson (A W G), 10
 Lake Savant area: Moore (E S), 10
 Lake Superior region: Brinsmade, 08g; Hille, 04; Willmott, 04; Winchell (A), 90c
 Lanark Co.: King (S), 10
 limonite deposition at Sturgeon Lake: Bowles, 11a
 Loon Lake district: Smith (W N), 05
 magnetic, eastern Ont.: Pope, 00; Victoria Co.: Merritt, 83

Ontario—Continued.

Economic geology—Continued.

- Iron:** magnetite ores: Ledyard, 91; along Central Ontario Railway; Lindeman, 13a
Haliburton Co.: Foye, 16a; Calabogie, Renfrew Co.: Lindeman, 14a
Mattagami basin: Baker (M B), 11, 11a
Michipicoten region: Bell (J M), 05; Coleman, 99c, 00, 00b, 01a, 02a, c, 06, 06b; Goetz, 12; Moore (E S), 06; Parsons (A L), 15; Seelye, 10; Willmott, 01; Helen mine: Coleman, 06b; Seelye, 10
Moose Mountain range: Bell (J J), 08; Coleman, 13f; Collins (W H), 14; Leach (N L), 08; Leith, 03b; Lindeman, 13b, 14
Nipigon ranges: Coleman, 08e, 09
Nipissing district: Miller (W G), 01
north of Round Lake: Moore (E S), 09
northern Ont.: Miller (W G), 03
northwestern Ont.: Coleman, 02; Parsons (A L), 18a
Onaman ranges: Moore (E S), 08, 09b
Rainy River district: Hille, 08a; Robinson (A H A), 17
southeastern Ont.: Miller (W G), 14
Thunder Bay district: Hille, 08a; McInnes, 99
titiferous: Chapman, 85
Victoria Co.: Merritt, 82
western Ont.: Hille, 02, 07
Woman River area: Allen (R C), 09a
Iron pyrites, southeastern Ont.: Hopkins (P E), 16
James Bay region: Ells (S C), 12; Wilson (A W G), 06
Kamiskotia Lake area: Burrows, 15a
Kaolin, Lake Nipigon district: Romanet du Caillaud, 08
Kingston district: Baker (M B), 13, 16; Ells, 02
Kingston-Lake Simcoe region: Murray, 54
Lac Seul region, western Ont.: McInnes, 02
Lake Abitibi area: Baker (M B), 09; Hopkins (P E), 18a
Lake Huron, north shore: Collins, 16; Logan, 49a
Lake Nipigon-Clay Lake region: Collins (W H), 09a
Lake of the Woods region: Lawson, 85; Van Hise, 11
Lake Superior region: Bayfield, 29; Bell (R), 70a, 73a; Brinsmade, 08g; Courtis, 77; Ingall, 88; Logan, 47a; Macfarlane, 86a; Nicholson, 73b, 75m; Smith (W H C), 92
Beaver mine: Brent, 88
north shore: McKellar, 74
Lake Wendigokan region: Moore (E S), 09c
Larder Lake district: Wilson (M E), 10, 12
Laurentian and Huronian north of Lake Huron: Bell (R), 92a
Lead: Corkill, 06; Uglow, 16, 16a; Vennor, 75
Galletta: Newnam, 17
Hastings Co.: Lewis (J V), 06
Kingdon mine: Hardman, 17
Lignite, Mattagami basin: Baker (M B), 11
Limestones: Fréchette, 18; Miller (W G), 05
London area: Stansfield, 16
Longuelac to Jellicoe: Burrows (A G), 17

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Economic geology—Continued.

- McArthur township: Hopkins, 12
Madoc area, Hastings Co.: Knight, 13a
Mamaine, Lako Superior: Dawson (J W), 57
Manitoulin Island: Bell (R), 66
Maple Mountain district: Ramsay, 09
Marl: Ells, 02a
Mattagami basin, iron and lignite: Baker (M B), 11
Mattagami Valley: Kerr, 06
Mercury, Cobalt ores: Clevenger, 15
Metallogenetic epochs, pre-Cambrian: Miller (W G), 15
Mica: Cirkel, 05; Corkill, 05a, 06, 07; De Schmid, 11, 13a; Ells, 04b; Merritt, 95
Kingston district: Baker (M B), 13
Ottawa district: Ells, 94c
Michipicoten district: Cue, 97; Willmott, 98
Michipicoten Island: Willmott, 07
Miller Lake and Everett mines: Barlow, 09c
Mineral resources: Carter (W E H), 05; Coleman, 96c; Gibson, 11; Merritt, 89; Miller (W G), 02b, 04a
Mines of Ontario: Corkill, 06
Molybdenite: Parsons (A L), 17
Molybdenum deposits: Walker (T L), 11, 11a
Montreal River district: Barlow, 08, 09b, c; Collins (W H), 09c, 10, 11; Tyrrell, 08b
Moose River basin: Bell (J M), 04; Borron, 90
Muskoka district: Parks, 01
Natural gas: Brumell, 92; Chalmers, 02a; Corkill, 05, 06; Coste, 06; Denis, 00; Knight (C W), 15a; Malcolm, 15
composition: Mickle, 14
Essex Co.: Coste, 00
Kent field: Knight (C W), 07; Mickle, 10
Port Colborne: Ashburner, 89a, 90; McRae, 89
southwestern Ont.: Brumell, 93a
Nickel: Miller (W G), 98, 05b; R Ont Nickel Comm, 17; Simmersbach, 17
Alexo mine, Timiskaming district: Baker (M B), 17; Coleman, 10d; Uglow, 11, 11a
Antik-Okan nickeliferous pyrrhotite deposits: Hillo, 06
Haileybury district: Miller (W G), 03b
northern range: Coleman, 04a
Sudbury: Barlow, 91, 04, 06c; Bell (R) 91; Boske, 14; Browne, 06; Clarke (F W), 89b; Coleman, 03, 04d, 05, 07d, 08, 12, 15c, 16b; Corless, 17; Dickson, 02a, 03a, 04; Foulton, 92; Goodwin, 93; Gregory (J W), 08b; Hixon, 06b, c, 09a; Hore, 12c, 13g; Howe, 14; Roberts (H M), 18; Silver, 02; Stewart (L), 08; Stokes (R), 07b; Stutzer, 08; Thomas (K), 12b, 14; Thompson (P), 06a; Walker (T L), 97
Nickeliferous pyrrhotites, microstructure: Campbell (W), 07
Nipigon district: Coleman, 09
Nipissing district: Collins (W H), 10a; Hore, 11, 11c, d, e; Uglow, 11, 11a
Nipissing mine, Cobalt: George (H C), 06
Nipissing-Timiskaming area: Barlow, 99
Northern Ont.: Livermore, 16; Stewart (A K), 16; Whitman, 17
Northwestern Ont.: Parsons (A L), 18a

Ontario—Continued.

Economic geology—Continued.

- Ogahalla to Collins, Northern Transcontinental
Railway: Hopkins (P E), 18
Oil fields, development: Williams (M Y), 18a
Oil prospecting in southwestern Ont.: Williams
(M Y), 18b
Onaman Range: Moore (E S), 09
Onaping sheet: Collins (W H), 14, 17
Ottawa district, mineral resources: Ellis, 99b, 01
Ottawa River region: Logan, 47
Peat: Anrep, 11, 14
Pembroke sheet: Ellis, 07b
Petroleum: Bell (R), 88; Brumell, 92; Chalmers,
02a; Corkill, 05, 06; Coste, 06; Denis, 00a;
Hunt, 68b; Knight (C W), 15a; Malcolm,
15; Miller (W G), 17c; Robb, 62a; Tyrrell,
65; Winchell (A), 66b
Enniskillen: Fleming, 63
Kent Co.: Coste, 07, 07a; Knight (C W), 07
Petrolia field: Stansfield, 17
southwestern Ont.: Brumell, 93a
Tilbury and Romney fields: Coste, 07, 07a
Petroleum springs: Robb, 61
Phosphate: De Schmid, 12a, 13; Falding, 86
Kingston district: Baker (M B), 13
North Burgess: Broome, 72
Ottawa Co: Vennor, 74
Phosphate and feldspar deposits: De Schmid,
12a, 13
Pigeon Point district: Van Hise, 11
Point Mamainse: Lane, 12
Porcupine district: Dobbs, 14
Porcupine lode, Port Arthur: Kirkland, 89
Port Arthur region, Lake Superior: Courtis, 87;
McInnes, 01
Pre-Cambrian, Lake Timiskaming: Miller
(W G), 05c
Pyrites: Fraleck, 07
Radioactive minerals: Brunton, 15
Rainy Lake region: McInnes, 96, 97; Van Hise, 11
Rainy River district: Fleming, 09; Hille, 09
Road materials: Reinecke, 15b, 16, 16a, 17, 17a;
Trenton-Napanee: Clark (K A), 17
Salt: Bowen (N L), 11a
Goderich area: Heinrich, 79; Hunt, 70, 77
western Ont.: Gibson, 73a
Sand and gravel: Ledoux, 18
Secondary enrichment in copper ores: DeKalb,
06
Seine River and Lake Shebandowan areas:
McInnes, 99
Seskinaka: Spearman, 15
Shabendowan district: Nicholson, 73b
Silurian, southwestern Ont.: Williams (M Y),
15b
Silver: Cole (A A), 10; Corkill, 06; Hore, 08;
Miller (W G), 05b
Cobalt district: Adams (F D), 10b; Bastin,
17a; Bell (J M), 14; Bell (R), 06a, b;
Courtis, 06; Davis (H P), 10; Dulieux,
10b; Emmons (S F), 10d, 11; Frank, 06;
Hallowell, 10; Harding, 07; Hurdman, 07;
Higgins (E), 09a; Hixon, 07; Hore, 08, 11,
11c, f, 12d, 13c, d; Hotchkiss, 05a; Hutch-
inson, 07; Loring, 07; Miller (W G), 07b,
11a, 13, 13a; Parks (W A), 07a; Reid (J A),
18; Rickard (T A), 07a; Stokes (R), 07a;
Tyrrell, 07a, 08a, 12c; Van Hise, 07

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Economic geology—Continued.

- Silver: Florence Lake district: Collins (W H), 10
Gowganda and Miller lakes area: Burrows
(A G), 09
Gowganda district: Collins (W H), 09, 13;
Colvocoresses, 10; Hore, 10b; Iseman, 10;
West, 09
Haileybury district: Miller (W G), 03b
Lake Superior deposits: Miller (W G), 13a
Maple Mountain district: Ramsay, 09
Miller Lake and Everett mines: Barlow, 09c
Montreal River district: Barlow, 08, 09, 09b;
Collins (W H), 09c, 10, 11; Meeks, 07a
Nipissing: Hore, 10c
Port Arthur: Courtis, 87; Kamanistiquia
belt: Wood (H R), 90
Silver Islet, Lake Superior: Blue, 97; Du-
bois, 71; Lowe, 82; McDermott, 77;
Macfarlane, 80a; Nicholson, 73b
South Lorraine area: Burrows (A G), 09a;
Phillips (W B), 09; Tyrrell, 13c
Sudbury area: Coleman, 13, 13f
Temagami Reserve: Mattair, 07
Temiskaming: Stutzer, 08a
Thunder Bay district, Lake Superior: Bell
(R), 87c; Bowen (N L), 11; Chapman
(E J), 69; Ingall, 88; McKellar, 95
Woods Location, Lake Superior: Macfarlane,
69
Slate Islands, Lake Superior: Parsons (A L), 18
Southeastern Ont.: Miller (W G), 14; Murray,
52a; Vennor, 79, 72, 72a, 73, 76
Sudbury deposits, classification: Coleman, 13i
Sudbury district: Barlow, 02, 04; Bell (R),
91, 91a, b, 92a; Bush, 94; Coleman, 04a,
05c; Dickson, 04; Garnier, 91; Hixon, 05;
Peters, 90; Tanton, 17
Sudbury minerals, quantitative measurement:
Dresser, 17
Sudbury ore deposits, genesis: Bateman, 17;
Coleman, 15c, 16b, 17a; Corless, 16; Dres-
ser (M A), 17; Goodechild, 18; Roberts
(H M), 18; St. Clair, 14; Tolman, 17a;
Walker (T L), 15; Anon, 16a
Sudbury-Cobalt-Porcupine region: Miller
(W G), 13, 13c
Superior and Huron lakes region: Rottermund,
56, 57
Talc, Madoc area: Knight (C W), 13a
Thessalon area, Lake Huron: Knight (C W), 15
Thunder Bay district: Bowen (N L), 11; Hille,
09; Ingall, 87, 88; McKellar, 96; Nichol-
son, 73b
Tin: Miller (W G), 11
Timiskaming district: Baker (M B), 17; Bur-
rows (A G), 14; Miller (W G), 05b
Topaz, tin, and granites: Miller (W G), 11
Upper lakes region: Coleman, 99
Vermilion River placers: Coleman, 01
Victoria, Peterborough and Hastings cos.:
Adams (F D), 94
Western Ont.: Bell (R), 86b; Coleman, 97, 98
Zinc: Corkill, 06; Uglow, 16, 16b
Historical geology.
Abitibi region: Johnston (J F E), 02; Wilson
(W J), 02

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Historical geology—Continued.

Albany River country: Bell (R), 87
 Algoma district: Tanton, 17
 Anderdon beds: Nattress, 11
 Animikie iron range: Silver, 06
 Animikie rocks, Thunder Bay: Ingall, 92
 Animikie (Loon Lake) district: Van Hise, 11
 Archean classification: Coleman, 12b
 Lake Superior region: Lawson, 87b, 90d, 91b
 Rainy Lake: Lawson, 12a
 west of Lake Superior: Smith (W H C), 93
 Archean conglomerates, origin: Barlow, 99a
 Archean-post-Archean contact: Willmott, 04a
 Arkona: Stauffer, 16b
 Attawapiskat region: Bell (R), 87; McInnes, 05
 Basaltic formation, Lake Superior: Dutton, 47
 Beatty-Munro area, Timiskaming area: Hopkins (P E), 15a
 Belleville district: Chapman (E J), 60a
 Big Duck Lake area: Hopkins (P E), 15
 Black River limestone, Lake Nipissing: Winchell (N H), 96c
 Borings: Brumell, 92; Knight (C W), 15a
 Boston Creek gold area: Burrows (A G), 16, 16b
 Bruce mines district, Algoma: Ingall, 03a, 04a
 05
 Canadian shield, Proterozoic: Coleman, 15
 Carp, Saxicava sands: Ami, 94c
 Cataract formation: Schuchert, 13f, 14a
 Cataract [Kingston]: Bonnycastle, 30
 Central Ont.: Wilson (A W G), 01
 Chazy formation in Ottawa Valley: Raymond (P E), 11a, d
 Cobalt area: Miller (W G), 13, 13a
 Cobalt series, Timiskaming region: Wilson (M E), 13
 Collingwood region: Chapman (E J), 60c
 Copper and iron regions: Coleman, 00
 Copper-bearing rocks, Lake Superior: Spencer (J W), 76a; age: Logan, 52c
 Corniferous, Anderdon: Nattress, 02
 Corundum area: Miller (W G), 99
 Cripple Creek gold area: Bruce, 12a
 Detroit River area: Nattress, 12
 Detroit River series, age: Stauffer, 16
 Devonian: Nicholson, 74; southwestern Ont.: Stauffer, 11, 15; western Ont.: Ami, 99b
 Dikes, Rainy Lake region: Lawson, 91
 Duck Islands, Lake Huron: Ami, 99a
 Eastern Ont.: Ells, 97, 99, 00b, 03d, 04d; Giroux, 97; Knight (C W), 05a; gold belt: Miller (W G), 02
 Echo Lake region, Algoma: Murray, 53; Whitney, 55b
 English River region: McInnes, 00
 Eramosa beds, Niagara formation: Williams (M Y), 15a
 Espanola district: Quirke, 17
 Essex and Kent cos.: Nattress, 07
 French River: Murray, 58
 French River sheet: Bell (R), 98
 Galetta: Ami, 94b
 Gauthier township: Burrows (A G), 17b
 General: Ami, 03b; Baddeley, 37; Bayfield, 45; Bell (R), 89b; Bigsby, 24b, 27, 29a; Chapman (E J), 64, 75; Collins (W H), 13c; Cope, 80k; Logan, 45b, 54b, c, 61; Malcolm, 15; Murray, 45, 54a; Ont R Com, 90; Rogers (W B), 42a; Rottermund, 56, 57; Willcox, 83a

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Historical geology—Continued.

Geologic map: Merritt, 88a
 Georgian Bay region: Bell (R), 78
 Georgian Bay-Ottawa River region: Murray, 57
 Glamorgan township, Haliburton Co.: Foye, 16a
 Glauconite unconformity, Devonian: Andr  e, 14
 Gold districts: Tyrrell, 13a
 Goodfish Lake gold area: Burrows (A G), 16a
 Gowganda district: Collins (W H), 09, 13
 Gowganda to Porcupine area: McMillan, 12
 Grenville series: Adams (F D), 08b
 Grenville sheet: Ells, 01a
 Grenville-Hastings series: Adams (F D), 97
 Grenville-Hastings unconformity: Miller (W G), 07a, 08
 Guelph: Nicholson, 75i
 Guelph dolomite: Clarke (J M), 03f
 Guelph formation: Williams (M Y), 16a
 Gunflint Lake district: Van Hise, 11
 Hagersville district: Stauffer, 13
 Haliburton area: Adams (F D), 98, 99, 00a; Barlow, 97
 Haliburton-Bancroft area: Adams (F D), 02, 13b; intrusions: Foye, 16
 Hamilton: Grant (C C), 92c, 93, 98, 99, 00a, 01; Walker (A E), 96, 97
 Hamilton formation, Thedford: Shimer, 02; Williams (M Y), 13
 Hamilton region: Spencer (J W), 75
 Hastings Co.: Chapman (E J), 60e; Macfarlane, 66; Wallbridge, 69; Wilkins, 77
 Hastings region: Hunt, 67
 Hudson Bay region: Savage, 17a
 Hunter Island iron deposits: Parsons (A L), 16
 Hunters Island: Smith (W H C), 92a
 Huron Co.: Gibson, 73
 Huronian: Coleman, 00a, 02g; Winchell (A), 89d
 Lake Huron: Pumpelly, 92
 north of Lake Superior: Bell (J M), 06
 Sudbury: Bonney, 88
 Timiskaming region: Collins (W H), 14b
 Huronian clastics, western Ont.: Coleman, 98b
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 Huronian-Laurentian contact, Lake Huron: Barlow, 90
 Iron Spur district: Uglow, 13
 James Bay region: Dowling, 04; Savage, 17a; Wilson (W J), 03
 Kamiskotia Lake area: Burrows (A G), 15a
 Killarney granite: Collins (W H), 16a
 Kingston area: Baker (M B), 16; Ordovician: Kindle, 16
 Kingston district: Baddeley, 30; Ells, 02; rock contacts: Ells, 03d
 Kingston-Lake Simcoe region: Murray, 54
 Kirkland Lake and Swastika gold areas: Burrows (A G), 14
 Kowkash gold area: Hopkins (P E), 16a, 17
 Laccolithic sills, northwest coast of Lake Superior: Lawson, 93a
 Lac Seul region, western Ont.: McInnes, 02
 Lake Abitibi area: Hopkins (P E), 18a
 Lake Huron, north shore: Collins, 16; Logan, 49a; Murray, 57c

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Historical geology—Continued.

- Lake Huron region: Bell (R), 94, 95; Bigsby, 21, 24; Murray, 49, 50, 59; eruptive rocks: Fairbanks, 90a
- Lake Huron-James Bay region: Bell (R), 77
- Lake Iroquois and predecessors, Toronto: Coleman, 99f
- Lake Nipigon region: Dowling, 99; McInnes, 95; Parks (W A), 03; Wilson (A W G), 02, 09
- Lake Nipigon-Clay Lake region: Collins (W H), 09a
- Lake Nipigon to Lake Abitibi: Burrows, 13a
- Lake Nipissing: Murray, 57a, b
- Lake of the Woods, region east of: Lawson, 87
- Lake of the Woods region: Bell (R), 83a; Bigsby, 52; Lawson, 85, 89; Parsons (A L), 11, 13, 13a; Van Hise, 11
- Lake Ontario, western end: Spencer (J W), 82
- Lake Simcoe area: Baddeley, 36; Johnston (W A), 12, 14
- Lake Superior, north shore: Selwyn, 85a
- Lake Superior region: Bell (R), 70a, 72, 72a, 73, 73a; Bigsby, 24a, 52a; Harvey (A) 89a; Hille, 04; Hunt, 83c; Ingall, 88; Lawson, 91a; Logan, 47a; 52c; Macfarlane, 66a; 67, 71; Nicholson, 73b; Selwyn, 83c, d; Whitney, 56b; Winchell (A), 88, 90c; Kaministiquia and Michipicoten rivers: Murray, 47a
- Lake Timiskaming region: Parks, 05; Paleozoic rocks: Hume, 17
- Lake Wendigokan region: Moore (E S), 09c
- Lake Winnipeg-Hudson Bay: Low, 87
- Larder Lake district: Wilson (M E), 12
- Laurentian, Hastings Co.: Vennor, 68
- Laurentian and Huronian Barlow, 93a; Lake Huron region: Barlow, 92; Bell (R), 92a
- Laurentian system: Adams (F D), 08a; Miller (W G), 11c
- Laurentian-Huronian contact, north of Lake Huron: Bell (R), 93a
- Longuelac to Jellicoe: Burrows (A G), 17
- Loon Lake district: Smith (W N), 05; pre-Cambrian: Parsons (A L), 13a
- Lower Huronian ice age: Coleman, 08c
- Lowville limestone, Lake Simcoe district: Johnston (W A), 13
- McArthur township: Hopkins, 12
- Madoc area, Hastings Co.: Knight (C W), 13a
- Maganatawan River: Murray, 57a
- Malachi to Lake Nipigon: Collins (W H), 13b
- Mamainse, Lake Superior: Dawson (J W), 57
- Manitou Islands, Lake Nipissing: Goodwillie, 93
- Manitoulin Island: Bell (R), 66, 70; Foerste, 13; Ives, 90
- Manitoulin Island district: Ami, 03b; Ordovician section: Foerste, 12c
- Matachewan gold area: Burrows (A G), 18
- Medina formation: Schuchert, 14a
- Michipicoten, iron ranges: Bell (J M), 05; Coleman, 02a, c; Parsons (A L), 15
- Michipicoten Bay: Tight, 87
- Michipicoten district: Bell (R), 99; Coleman, 99c, 00b; Willmott, 98, 01

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- Michipicoten Island: Burwash, 05; Poole (H), 92
- Mississauga River, Algoma: Graton, 03
- Mohawkian, Manitoulin Island and northeast: Foerste, 13
- Montreal River district: Collins (W H), 09c, 11
- Montreal River-Lake Huron region: Bell (R), 89a
- Moose Mountain iron range: Leith, 03b
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Georgia: Jones (S P), 09

Gold: Calvert, 54; Don, 98; Kraatz, 96; Palmer (C), 13a; Rickard, 95; Spurr, 03c; Voyle, 03; Wurtz, 94

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Douglas Island: Spencer (A C), 05b; Treadwell mine: Adams (F D), 89; Dawson (G M), 89c; Hershey, 11

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Colorado, Ouray: Endlich, 89

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National district, Nev.: Lindgren, 15; Winchell (A N), 12a

Nevada City and Grass Valley, Cal.: Lindgren, 96b

Nova Scotia: Faribault, 13; Hind, 70b; Rickard, 12

Cape Breton: Woodman, 99

Halifax Co., Moose River district: Woodman, 05

Waverley district: Wilson (B C), 94

Ontario, Algoma: Crosby, 02a

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Porcupine district: Hore, 12f, 13a, f, h

Timiskaming district: Burrows (A G), 14

western: Hille, 97

origin in quartz veins: Lobley, 94

Rawhide, Nev.: Whytock, 10

Saskatchewan, Amisk Lake district: Bruce, 18

South Carolina: Lieber, 59, 59a

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Black River section: Gordon (W C), 05, 07
Crystal Falls district: Clements, 99
Gogebic range: Allen (R C), 15a
Gwinn iron district: Allen (R C), 14d
Iron Mountain: Gresley, 97
Iron River district: Allen (R C), 10

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- Michigan: Isle Royale: Lane, 98
Keweenaw Point: Hubbard (L L), 94, 98; Irving, 85; Lane, 06
Keweenaw region: Lane, 16
Keweenaw series: Lane, 11a
Lake Superior region: Foster, 51, 51c; Pumpelly, 73b; Van Hise, 93e; Wadsworth, 98a
Little Lake district: Allen (R C), 14
Marquette district: Shumway, 81; Smyth (H L), 94a; Van Hise, 95, 97; Williams (G H), 90
Menominee district: Bayley, 04; Hulst, 93; Rominger, 81a; Smyth (H L), 94a; Williams (G H), 90
Penoque region: Irving, 90, 92
Pre-Ordovician: Lane, 07
Republic district, quartzite: Smyth (H L), 94
Republic trough: Smyth (H L), 93, 97
Sturgeon River tongue: Bayley, 99
Upper Peninsula: Allen (R C), 15; Credner, 69; Rominger, 81, 95; Rose, 04; Wadsworth, 90; copper region: Foster, 50a
- Minnesota: Emmons (S F), 93; Grout, 14; Hall, 69a; Kloos, 77; Lawson, 00a; Van Barneveld, 12; Winchell (A), 89b; Winchell (N H), 84e, 89b, 93, 00, 00a, 01; Zapffe, 12
Animikie: Winchell (A), 88a
Animikie slates and Ogishke conglomerate: Winchell (N H), 88c
Aitkin Co.: Upham, 99
Beltrami Co.: Todd, 99a
Benton and Sherburne cos.: Upham, 88
Brown and Redwood cos.: Upham, 84
Carlton Co.: Winchell (N H), 99a
Cook Co.: Grant (U S), 99
Crow Wing and Morrison cos.: Upham, 88
cupriferous series: Winchell (N H), 82c
Cuyuna district: Harder, 17, 17a
Cuyuna iron range: Adams (F S), 10; Leith, 07a
east central: Harder, 18
Grand Portage Island: Grant (U S), 94a
iron ranges: Van Barneveld, 12
Itasca Co.: Grant (U S), 99
Keewatin area: Hall (C W), 01a; volcanic rocks: Grant (U S), 94b
Kekequabic Lake region: Grant (U S), 93a
Keweenaw: Hall (C W), 01; Lake of the Woods: Winchell (N H), 06
Lake Co.: Winchell (N H), 99a
Lake Superior region: Whittlesey, 66a
Mesabi district: Grant (U S), 98; Leith, 03; Spurr, 94; Winchell (H V), 93, 93b; Winchell (N H), 99a; Wolff (J F), 16
Mesabi section: Winchell (N H), 09
Mille Lacs and Kanabec cos.: Upham, 88
northeastern: Elftman, 94, 98; Grant (U S), 89, 93, 94, 99; Spurr, 94a; Winchell (A), 87, 88; Winchell (A N), 00; Winchell (N H), 88b, 91b, 93e, 97a
northern: Winchell (H V), 88, 89, 89a
Pigeon Point: Bayley, 93
Pine Co.: Upham, 88
Rainy Lake region: Winchell (H V), 95, 99
Redstone region: Sardeson, 08a
Renville Co.: Upham, 88

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- Minnesota: Saganaga granite: Winchell (H V), 91
 St. Louis Co.: Winchell (N H), 99a
 southern: Hall (C W), 11a
 Stearns Co.: Upham, 83
 Swift and Chippewa cos.: Upham, 88
 Thomson slates: Spurr, 94e
 Vermilion district: Abbott (C E), 07; Clements, 02a, 03
 Wadena and Todd cos.: Upham, 88
 Yellow Medicine, Lyon and Lincoln cos.: Upham, 84
 Missouri: Broadhead, 93b; Buckley, 04; Hawthorth, 95; Shepard, 07; Winslow, 95
 Archean: Broadhead, 82b
 Iron Mountain sheet: Winslow, 94a
 Mine la Motte area: Keyes, 95h
 Ozark Mountains: Keyes, 95g
 Ozark region: Buehler, 17; Crane (G W), 12
 Pilot Knob: Pumpelly, 73a
 southeastern: Buckley, 09; Winslow, 96
 Montana, Algonkian formations: Walcott, 06
 Castle Mountain district: Weed, 96a
 Coeur d'Alene section: MacDonald (D F), 06
 Dillon quadrangle: Winchell (A N), 14
 Elkhorn, Jefferson Co.: Weed, 01
 Elkhorn Mountains: Stone (R W), 11
 Garrison-Philpsburg fields: Pardee, 17
 Helena region: Griswold, 98; Knopf, 13; Rothpletz, 15; Walcott, 14
 Lewis and Livingston ranges: Willis, 02
 Little Belt Mountains: Weed, 00
 Little Rocky Mountains: Weed, 96b
 Maryville district: Barrell, 07
 northeastern: Collier, 18a
 northwestern: Calkins, 09
 Park Co.: Emmons (W H), 08
 Philipsburg quadrangle: Calkins, 15; Emmons (W H), 07a, 13b
 Saltese: Calkins, 14
 southwestern: Douglass, 05a
 Three Forks region: Haynes, 16a; Peale, 93, 96
 Nevada: Spurr, 03
 Esmeralda Co.: Turner, 02
 Silver Peak quadrangle: Turner, 09
 New Brunswick: Bailey (L W), 90a, 01a; Credner, 65; Ells, 06c, 08a; Hind, 70d; Matthew (G F), 70, 08
 northern: Bailey (L W), 87; Ells, 81
 northern and eastern: Ells, 83
 Saint John: Ells, 08f; Matthew (W D), 95a
 southeastern: Ells, 85a
 southern: Bailey (L W), 72, 77, 79, 80; Matthew (G F), 65c, 79, 92c
 volcanic rocks: Bailey (L W), 05a
 western: Bailey (L W), 86
 New England: Hitchcock (C H), 82
 Newfoundland: Milne, 77; Murray, 66, 73a, 81; Weston, 96a
 Avalon Peninsula: Howley, 82
 Conception and Trinity bays: Van Ingen, 14a
 southeastern: Dale (N C), 15; Murray, 68a; Algonkian: Buddington, 14
 Trinity Bay region: Murray, 73
 White Bay: Howley, 03a

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- New Hampshire: Hitchcock (C H), 72a, 77; True (N T), 81; White Mountains: Hitchcock (C H), 73d
 New Jersey: Bayley, 10a; Britton (N L), 85b, 87; Cook (G H), 68, 87; Kummel, 09; Lewis (J V), 15; Spencer (A C), 05a; Wolff, 96, 97
 Archean: Nason, 89a; Wolff, 94a
 Franklin Furnace: Spencer (A C), 05f, 08d
 Hibernia fold: Wolff, 94c
 Highlands: Fenner, 14; sedimentary rocks: Bayley, 14a
 Hudson Co.: Russell, 80a
 Passaic quadrangle: Darton, 08b
 Raritan quadrangle: Bayley, 14
 Sussex Co.: Wolff, 98; white limestone: Wolff, 97a
 Trenton quadrangle: Bascom, 09b
 New Mexico: Keyes, 05b; Lindgren, 10
 Burro Mountains: Somers, 15
 Deming quadrangle: Darton, 17
 Hamilton mine: Lindgren, 06f
 Jornada del Muerto: Keyes, 05
 Luna Co.: Darton, 16
 Silver City quadrangle: Paige, 16
 New York: Adams (F D), 07; Kemp, 11c, 12c
 Adirondack Mountains: Alling, 17; Kemp, 99b, 00; Miller (W J), 17a
 eastern: Kemp, 99
 north of: Cushing, 99
 northern: Cushing, 99a, 05a
 Saranac Lakes region: Cushing, 02
 southern: Kemp, 99a
 western: Smyth (C H), 99, 99a
 Adirondack region: Cushing, 15a; Miller (W J), 13b, 16b; Newland, 08; Smyth (C H), 99b
 Blue Mountain quadrangle: Miller (W J), 17
 Broadalbin quadrangle: Miller (W J), 11b
 Canton quadrangle: Martin (J C), 16
 Clinton Co.: Cushing, 94, 97, 01
 Dutchess Co.: Merrill (F J H), 05a
 Edwards district: Newland, 17a
 Elizabethtown and Port Henry quadrangles: Kemp, 10c
 Essex Co.: Kemp, 94, 95, 97; Essex and Willsboro townships: White (T G), 94; Minerva: Finlay (G I), 02a
 Gouverneur quadrangle: Cushing, 18
 Herkimer Co., Little Falls: Cushing, 02a
 Highlands: Berkey, 07
 Jefferson Co.: Smyth (C H), 94
 Lake Bonaparte quadrangle: Buddington, 18
 Lake Placid region: Kemp, 98
 Lake Pleasant quadrangle: Miller (W J), 16a
 Little Falls quadrangle: Cushing, 05
 Long Lake quadrangle: Cushing, 07
 Manhattan Island: Friedrich, 89b
 Mohawk Valley: Darton, 97
 New York City: Berkey, 12, 12a
 New York district: Merrill (F J H), 02
 North Creek quadrangle: Miller (W J), 14a
 northern: Emmons (E), 42; Hall, 76b
 Ogdensburg region: Cushing, 16
 Orange Co.: Ries, 97b

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New York: Paradox Lake quadrangle: Ogilvie, 05
 Port Henry: Hunt, 83d
 Port Leyden quadrangle: Miller (W J), 10
 Poughkeepsie quadrangle: Gordon (C E), 10, 11
 Remsen quadrangle: Miller (W J), 09
 Richmond Co.: Britton (N L), 81a
 St. Lawrence Co.: Macfarlane, 65; Smyth (C H), 94, 97a
 St. Lawrence River region: Smyth (C H), 01
 Saratoga Springs region: Cushing, 14
 southeastern: Mather, 43; Merrill (F J H), 90, 98; Smock, 86
 Thousand Islands region: Cushing, 10a
 Warren, Saratoga, Fulton, and Montgomery cos.: Kemp, 01
 New York and adjoining States: Gordon (C E), 09
 nomenclature: Coleman, 06a; Lane, 15; Leith, 13a; Schuchert, 16c; Sederholm, 13b; Selwyn, 92; Winchell (N H), 01c; Woodworth, 13, 13b
 Nomenclature and correlation: Van Hise, 05
 North America: Hunt, 84c; Van Hise, 09a; Willis, 12
 North Carolina: Emmons (E), 56; Graton, 06a; Kerr, 75; Mitchell, 42; Nitze, 97b
 Cranberry quadrangle: Keith, 03
 Dan River field: Stone (R W), 12a
 Kings Mountain district: Keith, 17
 Nantahala quadrangle: Keith, 07
 Pisgah quadrangle: Keith, 07a
 Roan Mountain quadrangle: Keith, 07b
 Virgilina district: Laney, 17
 North Dakota, Devils Lake region: Babcock, 02
 Northwest: Van Hise, 92c
 Northwest Territory, Great Slave Lake region: Cameron, 18
 Hudson Bay region: Tyrrell, 97
 Tazin and Taltson rivers: Camsell, 16
 Winisk and upper Attawapiskat rivers region: McInnes, 09a
 Nova Scotia: Gilpin, 82b; Hind, 70d, e; Knight (O W), 11; Malcolm, 12
 Antigonish Co.: Honeyman, 86b
 Cape Breton Island: Fletcher, 78, 85; Gilpin, 86c; Clyburn Valley: Wright (W J), 14b
 eastern: Faribault, 87; Fletcher, 81, 87
 gold-bearing series: Faribault, 13
 Laurentian: Honeyman, 70a; Hunt, 70d
 Lunenburg Co.: Faribault, 14d
 Meguma series: Woodman, 08
 northern: Ells, 85a
 Queens Co.: Faribault, 14c
 Shelburne Co.: Powers, 15a
 Ogishke conglomerate, Minnesota: Grant (U S), 92; Winchell (N H), 88c
 Oklahoma, Arbuckle Mountains: Reeds, 10; Tishomingo quadrangle: Taff, 03
 Ontario: Adams (F D), 07; Barlow, 99; Bayfield, 45; Bell (R), 89b; Blue, 96; Chapman (E J), 75; Coleman, 11, 12b; Collins (W H), 13d; Ells, 95b; Logan, 54b; Miller (W G), 08, 11b, 15, 15a; Murray, 57; Tyrrell, 13a, 15b; Winchell (N H), 91b
 Algoma: Coleman, 99; Bruce mines district; Ingall, 03a, 05; Mississauga: Graton, 03

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Ontario: Algoma and Thunder Bay districts: Wilson (W J), 09
 Animikie iron range: Silver, 06
 Antik-Okan region: Hille, 06
 Beatty-Munro area: Hopkins (P E), 15a
 Boston Creek area: Burrows (A G), 16, 16b
 Cobalt district: Hore, 10, 11c, d; Miller (W G), 13, 13a
 Cobalt series, Timiskaming region: Wilson (M E), 13
 Cripple Creek area: Bruce, 12a
 Dryden gold area, district of Kenora: Thomson, 18
 eastern: Ells, 97, 03d, 04d
 Espanola district: Quirke, 17
 French River sheet: Bell (R), 98
 Galetta: Ami, 94b
 Gauthier township: Burrows (A G), 17b
 Goodfish Lake area: Burrows (A G), 16a, b
 Gowganda and Miller lakes area: Burrows (A G), 09
 Gowganda district: Collins (W H), 09, 13
 Gowganda to Porcupine area: McMillan, 12
 Grenville series: Adams (F D), 08b
 Grenville-Hastings series: Adams (F D), 97
 Grenville-Hastings unconformity: Miller (W G) 07a, 08
 Gunflint district: Trueman, 11
 Haliburton area: Adams (F D), 98, 99, 00a; Barlow, 97
 Haliburton-Bancroft area: Adams (F D), 13b
 Hastings Co.: Chapman (E J), 60e; Wallbridge, 69; Laurentian: Vennor, 68
 Hunters Island: Smith (W H C), 92a
 Huronian: Coleman, 00a; north of Lake Superior: Bell (J M), 06
 Huronian ice age: Coleman, 07c
 Iron Spur district: Uglov, 13
 Kingston area: Baker (M B), 16
 Kingston-Lake Simcoe region: Murray, 54
 Kirkland Lake and Swastika gold areas: Burrows (A G), 14
 Kowkash area: Hopkins (P E), 16a, 17
 Lac Seul region: McInnes, 02
 Lake Abitibi area: Baker (M B), 09
 Lake Huron region: Barlow, 90, 92; Bell (R), 92a; Coleman, 14; Collins (W H), 16a; Murray, 57c; Pumpelly, 92
 Lake Huron-James Bay region: Bell (R), 77
 Lake Nipigon region: Coleman, 07; Moore (E S), 07; Wilson (A W G), 02
 Lake Nipigon to Lac Seul: Collins (W H), 06a
 Lake Nipigon to Lake Abitibi: Burrows, 13a
 Lake Nipigon-Clay Lake region: Collins (W H), 09a
 Lake of the Woods, Manitou, and Dryden: Parsons (A L), 11
 Lake of the Woods region: Bell (R), 83a, Bigsby, 52; Lawson, 85, 89; Parsons (A L), 13, 13a
 Lake Savant Range area: Moore (E S), 10
 Lake Simcoe region: Baddeley, 36
 Lake Superior region: Bell (R), 70a, 72, 73a; Bigsby, 52a; Collins (W H), 09b; Dawson (J W), 57; Hunt, 83c; Lawson, 87b, 90d, 91a, b; Logan, 52c; Macfarlane, 66a, 67; Selwyn, 83d; Winchell (A), 90c

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- Ontario: Lake Timiskaming: Hume, 17; Miller (W G), 05, 05c
 Lake Wendigokan region: Mooro (E S), 09c
 Larder Lake district: Brock, 07; Wilson (M E), 10, 12
 Laurentian and Huronian, relations: Barlow, 93a
 Laurontian system: Miller (W G), 11c
 Long Lake district: Baker (M B), 17; Burrows (A G), 17
 Loon Lake district: Parsons (A L), 13a; Smith (W N), 05
 McArthur township: Hopkins, 12
 Madoc area: Knight, 13a
 Malachi to Lake Nipigon: Collins (W H), 13b
 Matachewan area: Burrows (A G), 18
 Mattagami basin: Baker (M B), 11, 11a
 Michipicoten area: Parsons (A L), 15
 Michipicoten Bay: Tight, 87
 Michipicoten iron ranges: Coloman, 02c, 06
 Michipicoten Island: Burwash, 05
 Michipicoten region: Bell (J M), 05; Willmott, 98
 Montreal River district: Collins (W H), 09c, 11
 Moose River basin: Bell (J M), 04; Bell (R), 83; Parks, 00
 Muskoka Lakos region: Lindsey, 13b
 Nipigon region: Coleman, 08c; Wilson (A W G), 10
 Nipissing district: Hore, 10a; Miller (W G), 01
 Nipissing-Algoma lino: Burwash, 97
 Nipissing-Timiskaming area: Barlow, 99
 northern: Coleman, 12a; Moore (E S), 12b
 northwestern: Coleman, 02; Collins (W H), 08a
 Onaman area: Moore (E S), 08, 09b
 Onaping area: Collins, 12, 14, 17
 Ottawa district: Ells, 01
 Parry Island: Walker (T L), 13
 Patricia district: Miller (W G), 12; Tyrroll, 13
 Pombroko sheet: Ells, 07b
 Porcupine district: Burrows (A G), 11, 12, 13, 15; Flynn, 11; Horo, 11b, 0
 Port Arthur district: Courtis, 87; Parsons (A L), 13a
 Rainy Lake region: Bigsby, 54; Coleman, 95; Lawson, 87a, 88, 12a, 13d
 Rainy River district: Parks, 98
 Red Lake region: Dowling, 96
 Rideau Lakes: Drummond, 95
 Round Lake-Abitibi River: Bolton, 03
 Russell Co., Rockland: Ami, 93a
 St. Ignace Island: Robb, 82
 Seine Rivor and Lake Shebandowan areas: McInnes, 99
 Severn River headwaters: Camsoll, 05
 Severn River region: Low, 87
 Slate Islands: Parsons (A L), 18
 southeastern: Miller (W G), 14; Vonnor, 70, 72, 73
 South Lorraine area: Burrows (A G), 09a
 Steeprock Lake: Lawson, 12; Smyth (H L), 91; Uglow, 13

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- Ontario: Sturgeon Lake district: Moore (E S), 11a
 Sudbury district: Barlow, 03, 04; Bell (R), 91; Bonney, 88; Coleman, 05, 13, 13f; Collins (W H), 14a; Roberts (H M), 18; Walker (T L), 97; Winchell (N H), 91f
 Sudbury series: Coleman, 14a
 Sudbury-Cobalt-Porcupine region: Miller (W G), 13, 13c
 Swastika area: Bruce, 14
 Temagami area: Miller (W G), 13
 Thessalon area: Knight (C W), 15
 Thunder Bay district: Bowen (N L), 11; Ingall, 92; Lawson, 90c
 Timagami district: Barlow, 04a
 Timiskaming district: Baker (M B), 17; correlation: Collins (W H), 13c; Huronian: Collins (W H), 14b
 Toronto region: Coleman, 13j
 upper lakes region: Coleman, 99
 Vermilion Lake district: Moore (E S), 11b
 Victoria Co.: Merritt, 82
 Victoria, Peterborough and Hastings cos.: Adams (F D), 94
 west of Lake Superior: Smith (W H C), 93
 western: Brent, 03; Coleman, 96, 97, 98; Murray, 58; Huronian clastics: Coleman, 98b
 West Shiningtree district: Stewart (R B), 12, 13a
 Whiskey Lake area: Coleman, 13a
 Pennsylvania: Lesley, 92; Rogers (H D), 58
 Chester Co., Doe Run-Avondale region: Bliss (E F), 16
 Coatesville quadrangle: Bliss (E F), 14
 Delaware Co.: Rand, 87
 Durham Hills: Peck, 11
 eastern: Jonas, 17; sedimentary rocks: Wherry, 18a
 Lancaster Co.: Frazer, 80
 Lehigh and Northampton eos.: Peck, 08
 Lehigh region: Millor (B L), 11b, 14
 Mercersburg-Chambersburg district: Stose, 09
 Philadelphia Co.: Hall (C E), 81
 Philadelphia district: Bascom, 04, 09a; Hitchcock (C H), 84b
 Piedmont district: Bascom, 05, 15; Mathews, 05
 southeastern: Frazer, 82; Hunt, 78
 South Mountain: Eaton (H N), 12
 Trenton quadrangle: Bascom, 09b
 York Co.: Frazer, 86a
 Primeval continent: Gratacap, 81
 Problem of: Van Hise, 08
 Quebec: Barlow, 06a; Bayfield, 45; Dresser, 06e; Ells, 97d, 98a, d; Miller (W G), 08; Selwyn, 79b; Winchell (N H), 95i
 Abitibi district: Wilson (W J), 10
 area north of Montreal: Adams (F D), 96a
 asbestos district: Harvie, 13
 Beauce Co.: Tyrrell, 15
 Belcher Islands, Hudson Bay: Moore (E S), 18
 Bell River region: Wilson (M E), 14
 Broadbaek River region: Cooke (H C), 14
 Buckingham area: Wilson (M E), 14a, 16

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Quebec: Chibougamau region: Barlow, 11, 11a; Dulieux, 10
 Coleraine area: Knox, 18
 eastern townships: Dresser, 02c, 10d; Ells, 87a, 88
 Fabre Township: Harvie, 11
 Gaspé district: Mailhot, 11
 Gaspé Peninsula: Ells, 85; Low, 85; Richardson (J), 58
 Grenville region: Logan, 57, 59; Wilson (M E), 17, 17a
 Grenville sheet: Ells, 01a
 Haliburton and Bancroft areas: Adams (F D), 10d
 Harricaw region: Bancroft (J A), 13a
 Hudson Bay region: Bell (R), 85b
 Keekeek and Kewagama region: Bancroft (J A), 12a
 Kewagama Lake area: Wilson (M E), 12a, 13c
 Labrador Peninsula: Low, 96a, 98
 Lake St. John district: Dresser, 16, 16b; Richardson (J), 72
 Lake Timiskaming area: Wilson (M E), 10a
 Larder Lake district: Wilson (M E), 10
 Laurentian: Adams (F D), 95
 Laurentian area north of Montreal: Adams (F D), 92b
 Laurentian highlands: Wilson (M E), 13b
 Laurentian series: Logan, 60b
 Mistassini region: Low, 85a
 Montreal district: Adams (F D), 96; Ami, 04a; Ells, 96
 Montreal-Quebec region: Logan, 54
 Murray Bay: Dawson (J W), 61b
 New Quebec territory: Denis, 13
 Nipissing-Timiskaming area: Barlow, 99
 Northern Transcontinental Railway, Hervey Junction-Doucet: Bancroft (J A), 17
 northwestern: Wilson (M E), 11
 Nottaway River region: Bell (R), 02
 Opasatica district: Harvie, 11b
 Orford area: Harvie, 12
 Ottawa district: Ells, 93a, 01
 Ottawa Valley: Osann, 02; Stansfield, 12, 13
 Pembroke sheet: Ells, 07b
 Pontiac and Ottawa cos.: Keele, 17
 Pontiac Co.: Thomson, 18; Wilson (M E), 12
 Portneuf Co.: Bancroft (J A), 16
 Portneuf, Quebec, and Montmorency cos.: Low, 92a
 Saguenay region: Laflamme, 85
 St. Francis Valley: Dresser, 06
 St. Lawrence, north shore region: Richardson (J), 70a
 southern: Dresser, 12b; Harvie, 14
 Three Rivers sheet: Ells, 00
 Timiskaming Co.: Wilson (M E), 18
 Ungava region: Low, 99a
 western: Vennor, 78
 Random terrane, Newfoundland: Walcott, 00
 Rhode Island: Emerson (B K), 97, 17; Diamond Hill-Cumberland district: Warren (C H), 14
 Rocky Mountain region: Hunt, 77d
 Saskatchewan: McInnes, 13a
 Amisk Lake district: Bruce, 18

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Saskatchewan: Lac La Ronge district: McInnes, 10
 northern: Bruce, 16a
 Sioux quartzite, Iowa: Beyer, 97; Keyes, 141; age: Keyes, 95r
 South Carolina: Graton, 06a; Sloan, 07, 08; Pisgah quadrangle: Keith, 07a
 South Dakota: Darton, 09a; Todd, 98
 Aberdeen-Redfield district: Todd, 09a
 Black Hills: Claypole, 92b; Crosby, 88a; Darton, 09; Hall (C W), 91; Paige, 13; Van Hise, 90; Harney granite: Ferguson (H G), 08; northern: Irving, 99
 De Smet quadrangle: Todd, 04a
 Harney Peak district: Duncan, 12
 Huron quadrangle: Todd, 04
 James River Valley: Todd, 04b
 Lincoln Co.: Bendrat, 04
 southeastern: Todd, 00
 Steep Rock series: Rothpletz, 15
 Taconic: Winchell (N H), 88e
 Tennessee: Safford, 69; Ducktown district: Emmons (W H), 11b
 Texas: Dumble, 90
 Black and Grand prairies: Hill (R T), 01
 central: Comstock, 90
 central mineral region: Comstock, 91
 El Paso quadrangle: Richardson (G B), 09
 Llano Co.: Paige, 10
 Llano and Burnet quadrangles: Paige, 12
 Llano-Burnet region: Paige, 11
 trans-Pecos: Richardson (G B), 04
 Van Horn quadrangle: Richardson (G B), 14
 Time-table: Schuchert, 14e
 Unconformities: Sederholm, 13
 Utah, Cottonwood-American Fork region: Butler (B S), 15
 northeastern: White (C A), 89
 Promontory district: Butler (B S), 16
 Uinta Range: Weeks, 07
 Wasatch Mountains: Blackwelder, 10a; Hintze, 13
 Vermont: Dale (T N), 16; Hitchcock (E), 61; Richardson (C H), 06; Whittle, 94
 Bennington: Gordon (C E), 14
 Green Mountains: Dana (J D), 72b
 Hardwick: Richardson (C H), 14a
 Newport, Troy, and Coventry: Richardson (C H), 08
 Orange Co.: Richardson (C H), 02
 unconformity: Keith, 14
 Woodbury: Richardson (C H), 14a
 Virginia: Hitchcock (C H), 82
 James River basin: Taber (S), 13
 Monticello area: Lambeth, 01
 Virgilina district: Laney, 17
 Volcanic rocks in Huronian: Dawson (G M), 94b; in the Keewatin: Selwyn, 94
 Wisconsin: Brooks (T B), 76; Chamberlin (T C), 83; Hall, 62j; Irving, 80b; Weidman, 15; Whittlesey, 60a
 Baraboo district: Weidman, 04
 Baraboo Valley: Eaton (J H), 74
 Douglas Co.: Grant (U S), 00
 Dodge Co.: Irving, 73
 Fox River valley: Weidman, 98

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- Wisconsin: Huronian series: Irving, 79
 Lake Superior district: Grant (U S), 01;
 Irving, 80a; Sweet, 80; Thwaites, 12
 Menominee iron region: Brooks (T B), 80;
 Wright (C E), 80a
 north central: Weidman, 07a
 northern: Allen (R C), 15; Irving, 74, 74a, 80;
 Thomas (K), 00; Sweet, 76a
 northwestern: Hotchkiss, 15
 Penoque iron range: Irving, 78, 90; Wright
 (C E), 80
 Penoque series: Irving, 92
 St. Croix district: Strong, 80; Wooster, 84
 Sauk Co.: Eaton (J H), 73; Irving, 72; quart-
 zite: Chamberlin (T C), 74, 74a
 southeastern: Alden, 18
 Waterloo quartzite: Warner, 05
 Wyoming, Big Horn Basin: Fisher, 06
 Big Horn Mountains: Darton, 06e
 Black Hills region: Darton, 09
 Encampment district: Spencer (A C), 04
 Fremont Co.: Jamison, 11
 Laramie and Sherman quadrangles: Darton,
 10c
 Medicine Bow Range: Blackwelder, 18c
 northwestern: Eldridge, 94a
 Owl Creek Mountains: Darton, 06
 southeastern: Blackwelder, 08
 Yellowstone National Park: Weed, 96
 Yukon, international boundary: Cairnes, 14
 Klondike district: Bell (R), 10
 Lewes and Nordenskiöld rivers district:
 Cairnes, 10a
- Precious stones. *See also* Gems; Diamonds; Sap-
 phires; Turquoise.
 British Columbia, Yaled istrict: Camsell, 10b
 California: Kunz, 05; Martin (A H), 10d; San
 Diego Co.: Cowan, 10; Lestrangle, 10
 Canada: Kunz, 88
 General: Kunz, 83, 95; Schaller, 16d; Sterrett,
 07d
 Georgia: McCallie, 10
 Idaho: Bell (R N), 07b
 in drift: Muilenburg, 14
 Maine: Bastin, 11
 Mexico, Lower California: Wittich, 16a
 North Carolina: Pratt, 08a, 11a
 Alexander Co.: Hidden, 87c
 emeralds: Sterrett, 12a
 Occurrences in North America: Gardiner, 11
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- Lake St. John district: Dresser, 16
- Lead: Denis, 12a; Uglow, 16, 16a
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